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Saml. Lewis M.D.

COLLEGE OF PHILADELPHIA.

PROCEEDINGS

OF THE

PATHOLOGICAL SOCIETY

OF

PHILADELPHIA.

VOL. III.

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1871.

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PROCEEDINGS

OF THE

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

1866. *Sept.* 14. *Fibroid Thickening of Pyloric Half of Stomach, Peritoneal Ulcers*, etc.—Dr. S. W. MITCHELL exhibited the specimens, and read the following report:—

S. G——, æt. 65 years, cabinet-maker. Has had good health, excepting a brief attack of jaundice eight years ago.

About two years back he began to complain of nausea and of intense pain in the left side after eating, followed in a half hour by emesis. These symptoms were readily relieved at first, but returning again and again, were conquered with increasing difficulty.

Last fall I detected a tumour which lay across the belly, at the level of the seventh rib. It could be felt to move with the diaphragm, but could be caught during deep inspiration, and detained within the grasp of the hand; released, it slipped upwards, and sometimes could not then be felt. It altered the percussion note very little. As neither liver nor spleen was enlarged, the position and form of the mass led me to think it might be the pancreas, but fats were as easily digested as other food, and the swelling was rather more conspicuous than are pancreatic tumours in general. Although most of the signs pointed to the stomach, and hinted at cancer, some of the more remarkable of these symptoms, such as vomiting, ceased long before the case ended; and, moreover, the smooth sausage-like form of the mass was unlike that of gastric tumours.

During last winter, and up to death, Sept. 4, 1866, the patient rapidly lost flesh; diarrhœa began in March, and he continued to have three to six loose stools daily. His urine was scanty and high-coloured, but not otherwise peculiar. His appetite decreased during the spring, so that to eat became a daily task; but during the last two months he did not vomit at all. The pain was in the left side two years ago. During the last winter it was referred to the epigastrium, and was constant until death ensued.

In August, while I was absent, Dr. W. W. Keen saw Mr. G., and was unable to discover the tumour. On my return, I was surprised to find the same difficulty. It was due, as we discovered, at the cadaveric section to the scaphoid form of the belly; the absence of wind permitting the anterior abdominal wall to be drawn so tensely across the angle formed by the cartilages of the ribs, as to make it impossible to seize the mass, and even to prevent it from being pushed far down by the act of breathing.

Death from asthenia took place Sept. 4, at 5½ A. M.

Post-mortem.—Section by Dr. W. W. Keen, Sept. 5, at 12 M. Extreme emaciation. On dividing the skin, etc., we could not anywhere see a morsel of fat. No gas in the small intestines, which lay so entirely in the lumbar regions alone, that the division of the teguments brought the aorta into view at once. There was some gas in the colon. The peritoneum, both the free membrane, and that upon the intestines was dotted with ulcers, least frequent and whitest near the peritoneal attachments; red, dark, or black, and most numerous near to the intestines. In the recto-vesical fold was an ulcer covered with clots of blood. Size two and a half inches long, half inch wide; edges ragged. The other ulcers varied in size as in tint, *i. e.*, from half a line to two lines in diameter. In many points they had healed, leaving a firm, white, central scar. They were present upon the gall-bladder in small numbers. Along the edges of the peritoneal folds, and hanging from the intestines, were watery yellow sacs, of small size, two to eight lines long, looking like the peritoneal pouches, empty of their usual fatty tissues. From the intestines also hung in numerous places what seemed to be projecting enlargements of veins. In some cases these were a line to two lines broad, and looked like hæmorrhoids. Liver, colour healthy; tissue normal; length eight inches, breadth five inches; gall-bladder half full of thin yellow bile. This sac projected an inch over the edge of the liver, a finger-shaped prolongation.

Below the liver, covered entirely by the transverse colon, was the stomach. It was composed of two parts; one, the pyloric, was hard and round, five and three-quarter inches long, and at one inch from pylorus, one inch and a quarter in diameter. It kept this size over four inches of its length from right to left, then grew a little wider, and finally formed a pouch, which was the cardiac end of the organ. It was here two and a half inches wide, and the walls were, as usual, soft and mobile. As they approached the pylorus they thickened, until they left a narrow passage through the length of the firm cylinder of tissue which ended at the duodenum.

There were no ulcers in the mucous coat of the intestines. One large ulcer at the beginning of the thickened part of the stomach, congestion, and even old inflammation all the way down the canal. Spleen and pancreas normal. Entire absence of fat around kidneys, which otherwise were healthy. Lungs adherent at top and upper third of right lung; no tubercle at apex. Lungs dotted on pleura and inside with little hard, white bodies, like small shot. (See *Microscopic Examination.*)

Heart small, and looks œdematous throughout. At the line of union of right auricle and ventricle there was a bulging sac full of gelatinoid fluid surrounded by smaller ones much like it in appearance. The largest was an inch long. Also, from the right auricle down to the apex along the right cardiac border, we found a line of similar bodies. These seemed to me to be pericardial doublings which had once held fat, but now were only half filled by water and loose connective tissue, with a minimum of adipose material.

Simple as this explanation may seem, the appearance presented by these bodies was altogether new to me; but I should add that I never before saw so absolute a loss of all the fatty tissues. There were about two ounces of fluid in the pericardium, a little less in the left pleura, and none in the belly.

One of the most curious points in this case was the finding a small particle of fat and of a small concretion, both lying free in the peritoneal cavity. The stone lay to the right, immediately internal to the external iliac artery. It has externally an organic layer, and within is hard. Dr. Bridges states that it is composed chiefly of phosphate of lime.

The following is the result of the microscopical examination made by Dr. W. W. Keen :—

I. *Stomach.*—The cardiac extremity of the walls of the stomach was somewhat thicker than usual. A section showed the glands considerably enlarged.

The pyloric extremity was about three or four times the normal thickness. A section here gave a large amount of fibrous stroma, arranged in oval and circular meshes. In these meshes were masses of nuclei and cells. The latter were nearly all fragmentary. Their walls were generally indistinct, their forms mostly rounded, or if angular, it was apparently by reciprocal pressure. Some few were nucleolated. The nuclei were mostly oval, rather large, granular, and in some cases nucleolated. They were more numerous than the cells.

II. *Heart.*—The apparently gelatinoid cysts showed (1), some connective tissue, with here and there an elastic fibre; (2), a large number of fat globules, and (3), abundant granular matter and fragments of cells. The connective tissue had no definite arrangement, nor did it contain within it the fatty and granular matters.

III. *Peritoneal Ulcers.*—They showed simply connective tissue with pigment in large quantities, and granular debris.

IV. *Lungs.*—The little, round, hard, shot-like bodies were made up of an outside circular ring of connective tissue with a large deposit of pigment in it. The contents of this ring of connective tissue were hard, gritty, friable, did not effervesce on the addition of hydrochloric, nitric, or acetic acid, nor was it soluble in these acids. Its character was not determined, but it was probably degenerated tubercle.

Sept. 26. Fracture of Cervical Vertebræ, with Anterior Dislocation and Compression of Spinal Cord; Death in Twenty-Four Hours.—Dr. WILLIAM PEPPER exhibited the specimen and read the following :—

Mary Nicholson, æt. 19, Irish, a large, heavily-built girl, was admitted to Pennsylvania Hospital at 4 P. M., July 5, 1866. The day previously, at about the same hour, she fell from a small pie-cherry tree, certainly not more than fifteen feet in height, so that in all probability her fall did not exceed ten feet. She fell into a cornfield, but it is uncertain upon what part of her body she alighted. From the time of this fall she has been unable to move either hands or feet.

Upon admission she was perfectly rational, and gave a clear account of her injury. Her voice, however, was feeble, and frequently interrupted. The pulse was small and frequent: respirations were 32 in minute, entirely diaphragmatic. Sensation was entirely lost from a little below the clavicle downwards, though in the subclavicular regions she was conscious of the contact when a pin was pushed deeply into the derm. All power of motion of the extremities and muscles of the trunk was gone. The bladder was paralyzed and much distended, as no urine had been passed since receipt of the injury. No discharge of feces had occurred. The tongue could be protruded at will, and moved in any direction. The expression of the face indicated great respiratory oppression, rather than acute suffering. The pupils were about normal; the cheeks brightly flushed and very hot. The whole surface of the body was of much higher temperature than normal—a thermometer in the left axilla showing 108.5° at instant of death.

The above observations were made quickly, as she gave me the history of her accident; and while she was speaking in a sufficiently clear, though interrupted voice, she abruptly asked to be raised in the bed : her breathing became gulping and imperfect, and in less than two minutes she fell back dead. The pulse continued perceptible at the wrist during the greater part of one minute; and the cardiac sounds were audible for between three and four minutes after the last respiration, becoming gradually slower, weaker, and more muffled and confused. Death thus occurred 24½ hours after injury.

Post-mortem twenty hours after death.—The brain was not examined. The body was large and very fat. The lungs were deeply congested. The heart contained a large quantity of blood mixed with clots, both dark and whitish firm ones. Abdominal viscera healthy. Intestines contained an immense number of cherry-stones.

Spinal column.—The tissues surrounding the cervical vertebræ posteriorly were ecchymosed, and infiltrated with bloody serum. No blood had escaped anteriorly into pharynx. Upon removing the cervical portion of the column, the fourth vertebra was found to be luxated anteriorly, owing to fracture of one of the articulating processes, so as to encroach considerably upon the spinal canal. In addition to this there was a comminuted fracture of the atlas, the lateral masses being separated and the arches broken in two places. There was not, however, any considerable laceration or compression of the spinal cord at this portion.

A brief review of this case suggests the following points of interest:—

1. The extreme degree of comminution of the atlas, without serious injury of spinal cord at corresponding point.
2. The simultaneous production of fracture, with anterior luxation of the fourth cervical vertebra—the paralytic symptoms being due to the injury of spinal cord at the seat of this lower injury.
3. The congestion of the face and the extreme elevation of the temperature of the surface.
4. The persistence of the cardiac contractions after the cessation of respiration.
5. The sudden death, undoubtedly caused by the movements of the patient displacing some of the fragments of the fractured atlas and producing compression of the upper portion of the spinal cord.

Oct. 24. Fibroid Tumour of Uterus.—Dr. WILLIAM PEPPER exhibited the specimen and read the following:—

The patient was of the higher classes of society, unmarried, aged about 46, of spare habit, but had enjoyed good health until twelve years ago.

The case has been under the care of Dr. Levick, to whose courtesy I owe the opportunity of examining and describing the specimen.

At that time—twelve years ago—she first evinced symptoms of uterine derangement, had excessive hemorrhages, and, upon a vaginal examination being made, the diagnosis was formed of uterine polypus, and an unsuccessful effort made to reach it with a double canula and ligature. The morbid growth has developed more or less rapidly from that time, producing most serious symptoms. For the first seven years she suffered with profuse hemorrhage, recurring at every menstrual period, at times so exhausting and prolonged as to threaten a fatal result. For the past five years this has moderated, and she menstruated regularly up to age of 43 or 44, when her courses ceased, apparently from natural causes. The most marked symptoms during this time have been difficulty in voiding urine, occasionally requiring the introduction of a catheter; severe pain in the pelvic cavity extending down limbs; œdema of lower extremities, more extensive on right side than on left; constipation, never excessive, being always relieved by mild laxatives; and occasionally dyspnœa and palpitation of heart.

There is a strong scrofulous taint in the family, but the patient has never evinced any tendency to tuberculosis.

About six weeks before her death, which occurred October 21, 1866, she noticed a small hard mass projecting from her vagina—horribly fetid, and discharging a thick sanious offensive matter. This mass increased in size, until it formed a horn-like projection from the vulvæ, two inches in length and almost an inch in thickness at its extremity.

The abdominal enlargement, which was as great as at the eighth month of pregnancy, underwent no diminution during this time.

Until a few days before her death she was able to move about the house, but then sank somewhat rapidly, and without manifest cause.

Post-mortem twenty-four hours after death.—Body emaciated. Brain and spinal cord not examined.

The lungs were anæmic, but healthy.

The heart was large, flabby, and slightly dilated: distended with dark, soft clots, and dark blood. There was no valvular disease.

The liver was somewhat enlarged and firm from chronic congestion, and presented, on the anterior part of the right lobe, a sulcus four inches long and one-third inch in depth, where the peritoneal investment of the organ was thickened and whitish. The apparent cause of this had been the great upward pressure which the uterine tumour had exerted upon the abdominal viscera, forcing the anterior edge of the congested liver against the edge of the ribs.

The base of the thorax was expanded, the lower ribs being thin, and their cartilages firmly ossified and quite brittle.

The spleen was enlarged to double its normal size: its tissue was firm and reddish.

The kidneys were somewhat flabby, and presented dilatation of their pelves, with some thinning out of their secreting structure.

The small intestines were forced upward under the arch of the diaphragm, and posteriorly into the lumbar regions; their calibre was small, and in places packed with hard scybalous feces, which, during life, had communicated a feeling of bosselation upon palpation.

Before opening the abdomen, it gave the impression of containing a uterus developed to the full term of pregnancy. The tumour could be distinctly traced through the parietes; its outline was ovoidal, its surface smooth and uniformly firm, elastic, and non-fluctuating. The superficial veins of the abdomen were unusually prominent. The part of the mass which projected from the vulva was evidently in an advanced gangrenous state, and extremely offensive.

Upon laying open the abdomen, the tumour was found to be strongly adherent to its anterior parietes, to the iliac fossæ, and posteriorly to the tissues along the spine.

The mass—which was evidently the enlarged uterus—rose up out of the pelvic cavity, extending almost to the ensiform cartilage, and displacing the abdominal viscera. The urinary bladder was tightly adherent to the lower part of its anterior surface, and was so drawn upward and bent forward and compressed against the pubis as to greatly constrict its lower portion. A single fold of small intestine was moderately adherent to the fundus of the tumour.

The ovaries were attached to the sides of the enlarged uterus, were of normal size, and marked with cicatrices from the escape of ova, and were in their normal relation with the Fallopian tubes, which appeared patulous and in every way healthy.

A large coil of distended vessels—branches of the internal iliac trunks—traversed the fundus of the uterus under the peritoneal coat, having entered the broad ligaments. The surface of the uterus also presented a fine network of quite large vessels.

The lower part of the tumour filled the pelvic cavity; more completely, however, on the right side, so as to produce greater pressure upon the vessels and nerves of that side, whilst the rectum was only moderately compressed.

The uterine cavity was laid open by a longitudinal incision through the anterior wall. The disease consisted in an enormous fibroid growth in the anterior wall, which appeared to have originated in the layer of muscular tissue adjoining the mucous membrane, and to have preserved the same relations during its development, so that the entire mass formed an ovoidal tumour in the anterior wall, preserving its mucous lining internally, and distending the external layer of muscular tissue of the anterior wall till it formed a thin capsule. The tumour had then developed downward, and had finally involved the cervix and grown into the vagina, still preserving the same relations to the uterine walls, so that the external layer was still stretched over it, and internally the mucous membrane of the anterior lip could be traced on the right side.

On the left side of the mass, it had advanced further into the vagina, even projecting, as before said, several inches from the vulvæ; and the gangrenous ulceration which was noted during life in the projecting part had extended up to the cervix uteri, destroying part of the mucous membrane lining the cervix, and any adhesions which might have been formed with the left side of the vagina.

On the right side, however, the mass was strongly adherent to the vagina about three-fourths of an inch below the cervix. The posterior wall of the uterus was much hypertrophied, and of distinctly muscular appearance; the cavity of the uterus was necessarily much enlarged.

The posterior lip of the uterus could be readily seen as a ridge separating the enlarged cavity of the cervix from the distended vagina.

The weight of the mass was about 20 pounds.

The measurements of the tumour and other parts of the uterus are subjoined:—

Circumference of uterus laterally	27¼	inches.
" " longitudinally	36	"
Length from fundus to tip of projecting part . . .	16	"
Length of projecting part—from cervix	6½	"
Thickness of anterior wall—through mass of tumour .	9½	"
" posterior wall near fundus . . .	1	inch.
Length of uterine cavity—from posterior lip to fundus .	7½	inches.
Width of uterine cavity	5½	"
" venous sinus in body of tumour . . .	⅓	inch.

The consistence and colour of the tumour varied; in the upper part it was very dense, hard, and elastic, and of a dull whitish colour, while in the lower part, which had occupied the pelvic cavity, it was much softer and more doughy, and was much discoloured, presenting patches of dark reddish-brown or black. Numerous large vessels, exactly resembling the sinuses of the impregnated uterus, traversed the mass: most of them contained firm, reddish coagula. The microscopic examination strongly favoured the view that it was in great part a homologous rather than a heterologous growth. There was very little fibrous tissue present in any of the numerous fields examined; but the bulk of the mass was composed of fusiform cells with single elongated nuclei, with numerous granular nucleated corpuscles and some larger nucleated cells interspersed through the tissue, or aggregated in loculi formed by the fusiform cells. These latter cells were wholly undistinguishable from partially developed uterine muscular fibre cells. Examination of the posterior wall of the uterus, which was reddish and evidently had developed into muscular tissue, showed exactly similar cells to those observed in the growth in the anterior wall.

In addition to these elements, there were abundant crystals of hæmatin, especially in the discoloured parts; and throughout the whole mass, numerous fragments of crystalline matter, probably phosphate of lime mixed with the ammoniaco-magnesian phosphate.

The mucous membrane of the cavity of the uterus was smooth in some places, but in others appeared excoriated and discoloured. The external layer of the anterior wall which, as has been said, was stretched over the growth so as to form a capsule, contained a considerable amount of fibrous tissue mixed with a few fusiform muscular fibre cells.

This case of morbid growth of the uterus presents numerous features of interest. The original starting-point of the growth appears to have been in the muscular layer adjoining the mucous membrane of the uterus; and yet its mode of development—retaining the same relations to the tissues—forms a marked exception to the rule, that the nearer the fibroid growth takes its origin to the mucous membrane, the greater is the tendency for it to protrude into the uterine cavity and finally to become pendulous and pediculated. This tumour also presented the peculiarities, so rare in growths of this nature, of being exclusively seated in the anterior wall, of involving the cervix and projecting into the vagina, and finally of having acquired strong adhesions with the vagina.

In regard to the gangrene of the inferior part of the mass, no more plausible suggestion offers itself than that this portion had been strangulated by compression against the bony outlet of the pelvis.

As to the essential nature of this growth, there seems little room for doubt. The clinical history of the case, the slowness of its development, the absence of hereditary predisposition, and the long retention of the general health, argue against the idea of its malignant nature, no less than do the anatomical characters, the regularity of outline, the healthy state of the ovaries and surrounding viscera, and finally the microscopic characters. And it is in accordance with the very positive evidence afforded by microscopic examination, that we are disposed to class this tumour with those alluded to by Vogel and by Jones and Sieveking, but most elaborately described by Bristowe[1]—which consist of tissue homologous with the structure of the uterus, and are in fact muscular growths of the walls of that organ.

Sept. 26. *Hepatic Abscess following Chronic Dysentery.*—Dr. HERBERT read the following history:—

Michael Hagan, born in Ireland, aged 27 years, was admitted into the Pennsylvania Hospital on Monday, July 2, 1866. He was a sailor on a schooner which ascended the Cape Fear River, North Carolina, for a load of shingles, which she brought to Wilmington N. C.; she then started for Philadelphia about the middle of last May. As they were coming up, a storm forced them to lie over at Fortress Monroe for three or four days, when they again started for Delaware Bay, being three or four days coming up. On the night after leaving Fortress Monroe, Michael Hagan slept on deck, without clothes. He awoke next morning with pains all through him, and was in such agony that he rolled from one side of the deck to the other; he suffered pain particularly in the right side, extending from the nipple to below the ribs, also great pain in the back and legs. He was landed at Lewes, at the mouth of the Delaware, whence he immediately came to the city in a steamboat. He remained sick four or five weeks with his friends, and then came to the hospital. When he entered, he was exceedingly pale, the whole surface of the body presenting very much the waxy appearance we notice in the lower extremities in cases of Bright's disease of the kidneys; lips and tongue were almost white; scleroticæ pearly. The expression of the face was very dull and heavy, and his intellect so very dull that we could obtain only the above history little by little, after many queries. There was no emaciation, but the body was round, the muscles soft and flabby. There was no pain, but great lassitude and a feeling of great weakness; no appetite; profuse sweating both night and day, with a cool, sticky skin; a great tendency to sleep both day and night, and very feeble pulse. He was, indeed, exceedingly weak. There was no abnormal tenderness, dulness, or distension of the abdomen; no enlargement of liver or spleen, but complete dulness over right thorax, and total absence of respiratory sounds except at the apex and the root of right lung; left lung was normal. Heart-sounds faint, but without murmur. Passes about normal quantity of urine daily, which is pale, clear, with slight whitish deposit; sp. gr. varying from 1004 to 1008; chlorides abundant; no albumen, and not phosphatic; urine was not examined under microscope. At this time there was no œdema, though he said his legs had been swollen; nor was there any diarrhœa, though he had had a little—could not make out when, but think he said he had dysentery last summer.

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[1] Proc. Path. Soc. London, 1853, vol. iv. p. 9.

He was placed upon the best diet, with twenty-four fluidounces of beef-essence and eight fluidounces of wine-whey daily. Prescribed tinc. ferri chloridi, and, believing there was a malarial complication, the sulphate of quinia was given.

July 4. Continues to lie upon his left side. Respiration is quiet and easy, pulse weak, and no appetite. The hydrothorax continues; sweats profusely; complains of weakness, but not of pain; sleeps well. No apparent change since admission.

6*th*. The only change apparent is slight emaciation, though he eats well, but without appetite. For last two days bowels have been rather loose, moved about four or five times in twenty-four hours; stools varying in consistence from that of Indian-mush to thick gruel, and are of a blackish or greenish yellow colour, probably due to the iron he is taking. Stools contain no blood, but some mucus.

8*th*. Emaciation is becoming more and more apparent. Still has the waxy hue of skin, but is not the least jaundiced. No diarrhœa since last note; did not find it necessary to give him anything for his bowels. The condition of chest remains the same; still the extensive dulness and the almost total want of respiration. Is still very weak, and still sweats profusely.

10*th*. The treatment is to-day changed from the tincture of the chloride of iron to pil. ferri carb. To-day, I think, for the first time, was noticed some swelling of the legs, with pitting upon pressure; also the slightest puffiness of the eyelids. Emaciation progresses, and though he has a little better colour in his lips, he nevertheless does not gain in strength. Urine does not contain the slightest trace of albumen; sp. gr. still very low.

20*th*. Upon examining the chest, find there has been no absorption of the fluid in right pleural sac; there is still the same extent of dulness and same absence of respiration. Heart-sounds are but faintly heard, but there is no murmur. Patient says he suffers no pain. Continues to be very dull, to sleep most of the time, and to sweat profusely. Is very much emaciated. Eyelids and feet very œdematous; appetite poorer; bowels were loose yesterday, but not so to-day. Treatment continued.

27*th*. Treatment to-day changed by giving the liq. ferri peracetatis in addition to the pill containing iron and quinia. Patient is gradually sinking.

30*th*. Seems a little brighter to-day; except this, can note no change.

Aug. 2, 9 A.M. Find him this morning lying on his left side, with his knees drawn up, suffering great pain in abdomen, which is very painful to the touch or when pressed upon. The pain is almost unbearable when he lies on his back. Ordered a warm flaxseed poultice to be applied over the abdomen, and an enema of twenty drops of laudanum, which in a short time gave him much relief. Was called to him at 8 P.M., and found him dying. Respiration ten per minute; no radial pulse at either wrist; heart's sounds scarcely audible; impulse not perceptible; whole body cold.

He died at 5.30 A.M., August 3.

Post-mortem examination, three hours after death, revealed the following: Body of a pale waxy hue, very white, with a slight tinge of yellow on the face. Greatly emaciated; eyelids and feet somewhat œdematous; well-marked cadaveric rigidity; body cold.

Thorax.—Upon cutting through the tissues, the muscles were found very much blanched. Raising the anterior wall of the chest, the right pleural cavity was filled with a clear greenish serous fluid, the lower and middle lobes of the lung being perfectly collapsed, the lower lobe being firmly bound down to the convexity of the diaphragm; the upper lobe, about four inches long and three inches broad, was the only portion of the whole right lung which was crepitant, and was seen floating in the fluid at the apex of the chest. The left lung was healthy, and bound down posteriorly by a few old bands. There was no fluid in the left pleural cavity. The heart was slightly pushed to the left. The pericardium was distended with about eight to ten fluidounces of serum; eight inches in length, and six in breadth, being the external dimensions of the distended pericardium. The serum was clear, and of a light yellow colour. The heart was rather small, but otherwise apparently healthy.

Abdominal cavity.—The abdomen was somewhat distended, and contained about four quarts of an opaque yellowish fluid filled with flocculi and shreds of soft yellow lymph. The intestines were distended with flatus and feces, and were everywhere glued together and to the peritoneum by soft yellow lymph, showing the occurrence of recent peritoneal inflammation. The intestines externally presented no evidence of perforation, or any marked internal inflammation or congestion, but presented an unhealthy appearance, being of a leaden hue. On the internal surface of the bowel, patches of this leaden-coloured discoloration were seen here and there throughout the entire length of the intestine, from the stomach to the rectum. In the small intestine the solitary glands and Peyer's patches were somewhat elevated and discoloured, the change being more and more marked as the ileo-cæcal valve was approached. The surface of the ileum just above the valve, to the extent of about five inches, presented the shaven beard appearance, as did also the Peyer's patches. The valve and the cæcum presented the shaven beard appearance, and the valve was very much thickened. The colon was very much thickened, every part of the intestinal wall being apparently thickened. The mucous membrane was very much softened, covered with thick mucus, and presented throughout the whole length of the colon numerous small rounded elevations having a slightly depressed centre, some injected and others pale; each elevation being about one-fourth of an inch in diameter, and appearing to be the cicatrices of old ulcers. These were rather more numerous and of more recent formation near the rectum and in the sigmoid flexure, where a few small chronic unhealed ulcers were seen. The intestines contained a considerable quantity of yellow liquid feces, containing some small portions of firmer consistence, which adhered to the sides of the intestine. The stomach was healthy.

The *liver* was almost concealed from view by the diaphragm, which was closely adherent to its whole diaphragmatic surface. The adhesions between the liver and the diaphragm were of recent origin, but somewhat firmer than those between the convolutions of the intestines. The superior surface presented externally a large abscess, looking like a fungus, from the fact of its being made up of numerous small abscesses communicating with each other. This abscess was covered by the diaphragm, and extended about eight inches from right to left, and five inches from front to back. The healthy portions of the liver were slightly yellow, and looked fatty. The unhealthy portions were of a dark bluish-brown colour, bulging, and dotted here and there with small yellow elevations, each about the size of a marble, which, when punctured, were found to be filled with apparently true laudable pus. The under surface was much more healthy in appearance. There was one yellow prominence containing pus upon the lobus quadratus, near the gall-bladder. The gall-bladder contained no gall-stones, but was full of healthy-looking bile. The liver was considerably larger than natural. Upon making a transverse incision three inches deep into the body of the organ where the abscess presented externally, the abscess was found to be made up of numerous small abscesses communicating with each other, the largest thus opened being about the size of a hen's egg. Each of the abscesses was filled with apparently healthy pus.

The *spleen* was about the normal size, but was shrivelled, and looked like a contracted spleen. Internally it was very firm, and of a light arterial red colour.

The *kidneys* were of normal size and appearance externally, but internally were very firm and pale, and felt like cartilage. They looked like amyloid kidneys in places, though they were not.

The *bladder* contained but little urine.

Microscopical appearances.—The blood was examined on the 28th of July, and the red corpuscles were found diminished in number, shrivelled somewhat, and some of them granular. The white corpuscles were perhaps slightly increased in number. There were no pigment granules. Contents of hepatic abscess, under the microscope, were seen to consist of granular matter, granular corpuscles without nuclei, and true pus-corpuscles, in abundance.

Liver-tissue.—Cells contained more than normal amount of fat, but preserved their nuclei.

The portion of the intestine which presented the shaven beard appearance contained grains of black pigment deposited in fine points in the mucous membrane.

Oct. 10. *Two Cases of Rupture of the Bladder.*—Dr. H. WILLIAMS presented the specimens and made the following remarks:—

James Benton, æt. 26, a native of Ireland, and very intemperate, fell, while intoxicated, from the mineral water wagon he was driving, and was run over. When brought to the Pennsylvania Hospital, half an hour later, he was in a condition of stupor, partly alcoholic, and in part from primary shock. The pulse was rapid, thready, and compressible, with a moist, pallid skin. The hips, thighs, and lower part of the abdomen showed signs of contusion, and were said to be the points over which the wheels passed. Considerable gastric irritation succeeded the stupor, with much cramp, colicky pain, and tympanitic distension of the abdomen. Several times, with difficulty, he passed small quantities of urine, always mingled with blood; the latter more or less deeply tinging it. He lived 34 hours after the injury in great constitutional depression, and died with little change of symptoms, save that the abdomen became more tense.

Post-mortem six hours after death.—Abdomen alone opened, which contained a full quart of mingled blood and urine; the pelvis was packed with clots of blood; there was a linear opening 1½ inch in length in the left posterior-vertical aspect of the bladder, the edges of which presented the appearance of having been separated by a disruptive force.

Mary McKees, æt. 53, a native of Ireland, was run over on the eve of Oct. 3d, 1866, by a wagon. On admission to the Pennsylvania Hospital within an hour after, she presented the following symptoms: A pulse of 130, characterized by great feebleness, respirations 28 in the minute, with a quite frequent tendency to yawn; the skin cool and damp, with marked pallor of general surface, while over the mons veneris there were marks of severe contusion, over which point the wheels were said to have passed. The crepitus of broken bone was easily obtained by grasping the iliac crests, and making movements from those points. Several hours later she was unable to void her water, and the catheter being introduced, about two ounces were drawn off so mingled with blood as to greatly interfere with its passage through the instrument. The patient complained greatly of cold, and external warmth, with diffusible stimuli, was employed, and the dorsal decubitus enjoined. The patient lived a little over 48 hours, with some reaction from her first depression, and was even cheerful; but the extreme pallor continued, and there was much tympanitic distension of the abdomen, with great tenderness over the lower part. An aperient produced a free evacuation of the bowels. The catheter, introduced twice in the 24 hours, never drew off more than 2½ oz. of urine, in which the admixture of blood became less and less, latterly only amounting to a tinge. She continued in great depression until death took place, on the eve of October 5th.

Post-mortem twelve hours after death.—Abdomen alone opened, which contained a pint and a half of mingled blood and urine. There were traces of old peritonitis in well-organized, firm adhesions, binding the omentum and some convolutions of the ileum together. Beneath the peritoneum, lining the pelvis, there was much extravasated blood mingled with urine. The left pubic portion of the os innominatum had sustained a much comminuted fracture, and a sharp fragment had inflicted a penetrating wound of the bladder, to the left of its mesial line, and about 1¼ inch below the point where the peritoneum is reflected from the fundus to the anterior wall of the abdomen. The bladder was collapsed and empty, save a few clots of blood.

1866. *Sept.* 26. *Tuberculous Disease of Testis.*—Dr. PACKARD exhibited a tuberculous testis of the right side, removed by him in the morning from a man about 30 years of age, a patient at the Episcopal Hospital. Previous to removal, the diagnosis had been somewhat doubtful from the stony hardness and weight of the tumour, and its slightly nodulated shape. The man had had venereal disease, probably syphilis, twelve years ago. The operation was done in the usual way, except that the cord was compressed by the pin and wire loop, as in Simpson's third method of acupressure. On section after removal, the tumour was obviously tuberculous, breaking down into an abscess in its more central portion.

(This case did well so far as concerned the local disease, but after the wound had healed typhoid symptoms declared themselves, the patient's strength failed entirely, and he died of phthisis, as shown by the post-mortem examination, on the 28th of October.)

Oct. 10. *Cystic Disease of the Testicle from Injury.*—Dr. PACKARD exhibited a testicle affected with cystic disease, of singular origin, removed by him from a patient at the Episcopal Hospital; and gave the following account of the case:—

Robert Sims, an Englishman, æt. 28, employed on the Reading R. R., was struck, twenty-one months ago, on the left testicle, and on the sternum, by a plank which flew up against him. Necrosis of the sternum ensued, and part of the bone exfoliated. The testicle became much enlarged and swollen, and subsequently an abscess formed and pointed. The same thing happened five times afterwards.

Oct. 6, 1866. On his admission into the Episcopal Hospital, the left testicle was enlarged, hard, lobulated, with an opening anteriorly from which was constantly exuding a ropy-yellow liquid, like synovia mixed with pus.

10*th.* The testicle was removed in the usual way, except that hemorrhage from the spermatic artery was controlled by passing a pin under the cord, and embracing the latter in a loop of wire, as in the third method of acupressure described by Simpson.

On examination the structure of the gland was found to be almost entirely substituted by a mass of cysts, filled with liquid like that discharged, except that it was less ropy.

Cold water dressing was applied, after the wound had been closed with lead wire sutures.

The case did perfectly well, except that some swelling occurred just above Poupart's ligament; this yielded to simple means, and on Nov. 5, the man was discharged entirely cured.

Oct. 24. *Cystic Disease and Degeneration of Kidney.*—Dr. JAMES TYSON exhibited the specimen, and made the following remarks:—

This specimen proved to be one of unusual interest. Careful examination shows the kidney to be cystic, made up of as many as six cysts of a size ranging from ¾ of an inch to 2 inches in diameter. Each one of these cysts was filled with a peculiar creamy matter, of a consistence, however, somewhat thicker than cream, yet so fluid as to tend to exude without pressure. In one or more smaller cysts the matter appeared more gelatinous, and somewhat translucent. The entire cortical structure was thus converted, there remaining only the fibrous capsular portion which was thickened and hardened. *Microscopically* this white cream-like substance was found to consist for the most part of *granular fat*, as indicated by its appearance and response to the reagent used (ether). Here and there, however, there appeared in the field of view, as exhibited by several slides, the so-called granule-cell corpuscles (Bennett), or exudation corpuscles (Virchow), in different stages of degeneration; some almost entire, filled with the dark, highly refracting granules, others partially disintegrated, others completely so, having liberated the granules which went to make up the *emulsion*, while the empty, shrivelled cells remained. These corpuscular appearances were brought out more distincly by the aid of ether.

The glairy, gelatiniform matter was found to contain more largely these corpuscular elements. There were many of the large exudation corpuscles also in different degrees of degeneration, with granules and shrivelled cells. In other words, the degree of degeneration had not gone so far in these gelatinous portions as in the white cream-like product of other cysts. Since in my possession much free oil has exuded from the mass from solution and aggregation of the fat granules.

The above appearances in their different stages are quite significant, and aid us in explaining the mode of growth. The peculiar glairy and creamy products correspond precisely with the contents of certain ovarian cysts, a correspondence for the suggestion of which I am indebted to Dr. Edw. Rhoads, with whom I made the microscopic examinations a second time. The mode of formation of the contents of the cysts is similar to that by which the corresponding ovarian products are obtained, as described by J. Hughes Bennett, though the primary formation of the cyst itself must of course be different, as the ovarian cysts are usually supposed to begin in a dilated Graafian follicle. These cysts are lined with epithelial cells, which, multiplying rapidly, throw off progeny after progeny of young cells which undergo fatty degeneration, become filled with granular fat, and finally break up, liberating the granules which they previously contained, and leaving mingled with them the shrivelled disintegrated walls described as present in the microscopic appearances. The glairy portions, as already stated, have not reached the same degree of degeneration as the white creamy matter, and, therefore, contain more entire granule-cells, and cells having undergone a less degree of degeneration.

I must state, however, that I was unable to detect any epithelium by examining microscopically the close scrapings of the septa of the cysts after this soft pultaceous matter was removed; such matter was composed almost entirely of fibrous tissue, as indeed might be expected, for all of the tubular structure had disappeared and in the onward march of the disease the fibrous capsule was reached, when the process of further formation of cells ceased, though those already formed could of course go on degenerating and producing the peculiar matter with which the cysts were filled, thus accounting for the advanced stage of degeneration of the greater part of it. By no means all of the septa were examined and upon some of them, of later origin, epithelium might have been found. Rokitansky says "there is often no epithelium in the larger cysts, and their inner layer is a nucleated, structureless, or striated blastema, externally splitting into fibres in the direction of the long axis of the oval nuclei it contains."

Nov. 14. *Spina Bifida; Death at age of* 32 *Years.*—Dr. WM. PEPPER, in presenting the specimen, read the following account of the case:—

Benjamin Miller, æt. 32, a merchant, was admitted to the Pennsylvania

Hospital, July 17, 1866, reported to be labouring under sunstroke. During the first day he could return imperfect answers, but rapidly passed into a condition of profound insensibility; with upturned, oscillating eyeballs; involuntary discharges; irregular gasping, noisy respirations, but without any paralytic symptoms. He remained in this condition until July 21, when he died. During life, a tumour, oblong in shape, about three and a half inches long, one and a half wide, and the same in height, was noticed in the lower part of the dorsal region. After death, the following particulars were obtained: he had been all his life subject to severe attacks of headache; and whenever the tumour was pressed upon, he would have one of these headaches, with temporary delirium. For the three or four days preceding his admission he had been much exposed to the sun, and was much exhausted, with symptoms, however, of some obscure cerebral disease, rather than of true sunstroke. His habits were very intemperate.

Post-mortem twelve hours after death.—Blood dark and too fluid; lungs deeply congested; heart contained some fluid blood, with firm whitish clots; liver congested; slightly granular and tough; kidney congested; spleen, stomach, and intestines, apparently healthy.

Brain.—The membranes over the convexity were milky and thickened. Around the base of the brain and over the cerebellum, the membranes were coated with tough grayish lymph, matting the structures together.

The membranes, and brain substance were quite pale, and presented no appearance at all of recent inflammation. Upon laying open the lateral ventricles, they were found distended, each one containing about f℥iij of slightly turbid serum. The velum interpositum was opaque; and the choroid plexuses cloudy, and probably enlarged. This condition of the membranes extended down over the pons: but the spinal meninges did not appear diseased.

The tumour in the back was found to consist of the thickened skin inclosing the sac of a spina bifida. The deficiency was seated along the spinous processes of the ninth and tenth dorsal vertebræ; and was about two and a half inches long by half an inch in width.

The dura mater of the cord was continuous over the sac, and adherent to the bone at the point of deficiency. The spinal cord was apparently quite normal, none of its fibres entering the sac of the spina bifida.

Intra-Capsular Fracture.—Dr. H. Allen presented the following specimen, accompanied with a brief history.

Mrs. ——, aged 70, suffering from chronic softening of the brain, fell from a lounge to the floor, and received a simple transverse fracture through the neck of the left femur within the capsule. The usual symptoms were manifested; the patient complained of no pain except when interrogated; death ensued on the third day after accident.

An autopsy was held within twenty-four hours after death; no detailed notes upon the condition of brain and arteries have been preserved. The upper third of the affected femur was removed, and the specimen presented to the Wistar and Horner Museum, by Prof. Francis G. Smith, who had charge of the case; it there came under the notice of Dr. A.

The fracture was immediately beneath the head, nearly transverse, without comminution beyond the detachment of a small thin fragment about the size of a half dime, from the posterior wall of the neck. The neck measured three and a half centimetres in length; the angle of the head and neck to the shaft was not perceptibly changed. Upon opening the detached fragment and shaft longitudinally, the interior was found much congested at the neck, portion of the head, and downward along the shaft to the extent of four centimetres. This was more conspicuous along the inferior and inner edge than elsewhere; that in the region of the great trochanter being healthy. At the seat of fracture, the cancellated structure was filled with clotted blood of a black colour, and extended in the shaft from the fractured surface, downward and outward to the extent of two centimetres. In the head, two similar clots were found near the superior and inferior borders. The bone around these clots was more deeply reddened than elsewhere. A fourth small clot was seen beneath the medullary membrane, upon the inner wall of the cavity, at the lower end of the congested area four centimetres below the neck of the bone. These clots with the exception of the last, were thought to have been derived from the blood soaking into the cancelli, from the ruptured vessels about the seat of lesion; the smaller inferior clot was probably obtained from a minute endosteal hemorrhage. Their presence was interesting as suggesting one of the causes of non-union in these fractures. In the head and neck of the aged femur, when the parts possess a tendency to absorption, such clots, owing to deficient number or want of activity in neighbouring vessels, might act as mechanical obstacles to resist efforts at repair.

Extensive Epithelioma of Stomach, without Distinctive Symptoms during Life.—Dr. PACKARD exhibited a stomach, with a portion of the duodenum, pancreas, and liver; close to the pyloric orifice of the stomach was a very large, somewhat earshaped, flattened and lobulated ulcer, of epitheliomatous appearance. The head of the pancreas was not involved in the disease; the liver was obviously fatty.

The history of the case was as follows: Mrs. W. C., æt. 60, had been sick since early in June, 1866. I was called to see her on June 23; she was then suffering from oppression, loss of appetite, general weakness, and distension of the abdomen. Her pulse was feeble and intermittent; her urine somewhat scanty, but not otherwise abnormal. She was taking some purgative pills occasionally, with great relief. She had always been of active habits, although not of robust frame; had had twelve or fifteen children, three of whom only had lived beyond infancy.

I gave her iron and digitalis, and subsequently nux vomica and gentian, together with nourishing diet. She suffered much from flatulence, and took essence of ginger, and afterwards gin, with benefit. Occasional attacks of dyspnœa were controlled by Hoffmann's anodyne. From first to last she had neither vomiting, fixed pain, nor tenderness of the epigastrium, nor did the use of food, or of the pungent articles above mentioned, produce any uneasiness. Blood was never passed by her at stool, to my knowledge; although possibly the blackness of the discharges, attributed by me to the iron she was taking, was partly due to the former cause.

Late in the summer her husband had a dysenteric attack of some severity, and the fatigue of waiting upon and nursing him aggravated her own symptoms. Œdema of the lower limbs, which had appeared from time to time, became persistent and troublesome, and gradually passed into general anasarca. Her urine was full of uric acid and oxalate of lime; nevertheless, she seemed better and more cheerful. On Sunday, Nov. 11, she sat up for several hours, and got rather tired. As her husband was helping her back into bed, her head fell forwards, and she died in a few moments, obviously from failure of the power of the muscular fibres of the heart.

Autopsy twenty-four hours after death.—Mr. W. Müller, of the Pennsylvania Hospital, kindly assisted me. Body quite flaccid; muscles fatty; a good deal of fat in all the tissues.

Heart very fatty; full of soft dark clots; its own veins in a markedly varicose state.

Stomach greatly distended with flatus, but healthy, with the exception of the enormous epitheliomatous growth already spoken of. Gall-bladder full of gas. All the abdominal tissues were in a singularly emphysematous condition.

The other viscera seemed healthy, except that the liver and kidneys were in a state of advanced fatty change. The specimen was referred to a committee.

Nov. 28. *Examination of tumour.*—Report by Drs. EDW. RHOADS, H. ALLEN, and WM. PEPPER:—

Internal surface was flat, elliptical, and measured five inches in length, three inches three lines in width. It was situated at the pyloric extremity of the organ, with its long axis in the line of its circumference, and its lower edge impinging upon the posterior and inferior edge of the pylorus. It was defined by a conspicuously everted lip three lines high, though somewhat thicker and higher at its lower anterior edge. The mucous membrane on the growth was smooth, glistening, and presented a mottled appearance, varying from the dull grayish hue of the healthy membrane to the blackish-brown tinge of capillary oozing. An irregular circular area, one inch in diameter, was seen at the postero-inferior part, which was surrounded by a uniform elevation of the mucous membrane, and corresponded to a preternatural thinning of the walls. Its surface presented several elevations of about the size of a mustard seed. Elsewhere the tumour was even, of uniform thickness save at its superior portion, where several doughy bossillations attained a thickness of one half an inch.

External surface, a number of irregular elevations were met with resembling enlarged lymphatic glands.

The stomach elsewhere was normal.

Examination of gastric growth, &c. Liver.—Cells contained abundant oil drops, their nuclei were for most part obscured. There was also a considerable amount of free oil in globules and granules.

Kidney.—Malpighian bodies were granular; tubules were cloudy and opaque, and contained granular fatty matter.

Stomach.—By scraping the surface of the healthy mucous membrane, a field was obtained, showing very numerous epithelial cells, granular and slightly fatty, and mixed with some free oil globules.

When the surface of the morbid growth was scraped in the same way, the cells obtained altogether resembled those from healthy portions of the mucous membrane: if any difference was noticed, it was that the former were slightly smaller. Upon cutting into one of the nodular masses of the growth from its peritoneal surface; the section presented much the appearance of a hypertrophied lymphatic gland, the tissue being firm and of a pinkish flesh colour. By scraping this surface, a whitish juice was pressed out, which was composed exclusively of rounded cells, quite uniform in size, being rather larger than pus-corpuscles: highly granular and generally showing a nucleus indistinctly through the cell contents. Upon addition of acetic acid, however, these cells cleared up markedly, and disclosed one or two nuclei, but in no instance was a trefoil arrangement of nuclei present. In some of the cells, the nucleus was unusually large in proportion to the containing cell.

A section of this portion showed an entire absence of fibrous stroma; the cells composing the tissue being partly of the character last described, and partly cells of a much larger size, with rather faint outlines and nebulous, minutely granular contents; containing one, or in a few cases, two, large clear nuclei, frequently with one small nucleolus. Sections of the morbid growth in other portions showed the same elements. In no place was any appearance of the glandules of the stomach noticed.

This new tissue was invested by the peritoneum externally, which was not abnormally adherent, nor at all thickened or opaque, and internally by the mucous membrane, which was perhaps thinned, but did not appear otherwise abnormal.

A consideration of the histological elements of this specimen, especially when viewed in conjunction with the age of the patient and the clinical history of the case, appear to your Committee to warrant the conclusion that we have here true adventitious tissue of a more or less malignant nature; and which, from its anatomical relations, was quite probably developed in connection with the gastric glands.

Dec. 12. *Cancer of Stomach, Liver, Spleen, and Mesenteric Glands.*— Dr. EDW. RHOADS exhibited the specimens and made the following remarks :—

Amos Noe, aged 54 years, a blacksmith of unusual strength, and without hereditary tendency to disease, began, in 1863 or the early part of 1864, to suffer pain in the right hypochondriac region with marked dyspeptic symptoms. He emaciated and lost strength quite rapidly, and assumed a markedly cachectic appearance. He continued able to work until a few months before his death; but his bowels became very much constipated, and he began to vomit frequently, with troublesome hiccough.

He took to his bed about two weeks before his death, which occurred December 11, 1866. For some time previously he had great œdema of the lower extremities and considerable ascites. His constipation became obstinate, and towards death he suffered from hiccough and constant vomiting of large quantities of grumous dark-coloured fluid; no severe pain was complained of at this time; there was no bronzing of the skin, though over the right iliac region from the pubes almost up to the edge of the ribs, there was discoloration, with dryness and cracking of the epidermis; this, however, was probably due to counter-irritants applied over this part; there was no jaundice at any time.

About a week before his death, the ascites suddenly disappeared within a period of thirty-six hours, leaving the belly flaccid; there was no simultaneous discharge of fluid, either from the skin, bowels, or kidneys, the only avenue of discharge being the excessive vomiting,

The above history was obtained from Dr. Stroud, under whose care the patient was during the last few weeks of his life, and to whose courtesy I am indebted for the opportunity of presenting the specimens.

I am also indebted to Dr. William Pepper, who assisted in the postmortem examination, for his aid in describing the various lesions.

Autopsy twenty-four hours after death.—Brain and spine not examined.

Body small and much emaciated; belly scaphoid, the skin lying in folds.

Thorax.—Lungs entirely free, and contained a few calcareous nodules, but were crepitant throughout.

Heart small and flabby; the valves healthy; no traces of pericarditis or pericardial effusion.

Abdomen.—On laying open the abdominal cavity, the liver was found to extend one and a half inch below the ensiform cartilage, but on removing it, it was found not to be enlarged, its position being due to the adhesions described below. Over its convexity, especially over the right lobe, the diaphragm was very strongly adherent; but upon being separated, the adhesion was found to depend upon the development of five or six firm cancerous nodules in the substance of the diaphragm. These nodules varied from the size of a small hazel to that of a walnut, and as they increased in size had encroached upon the tissue of the liver, until they had formed cup-like depressions, the largest being three-quarters of an inch in depth. The peritoneum was smooth over these depressions, slightly opaque and thickened, and was moderately adherent to the peritoneum covering the nodules. Over the posterior part of the convexity of the liver, there were intimate adhesions between the liver and diaphragm, and in one place there was a cancerous deposit involving them both. There were also several large nodules, three-quarters of an inch in diameter, of firm, almost scirrhous, cancer in the right lobe of the liver. The lobulous quadratus was much enlarged and prominent, and upon being incised was found filled with whitish softened cancerous matter.

The *gall-bladder* was very small and empty; its duct was compressed by the mass formed by enlarged glands in the fissure of the liver.

The *stomach* was large, distended, containing a large amount of dark slate-coloured, grumous, pasty fluid. The mucous membrane and walls appeared healthy, excepting towards the pylorus. This opening presented, internally, a nodulated, ragged, whitish or discoloured mass, with a sinuous irregular opening, through which the little finger could scarcely be passed. The pylorus and the neighbouring glands were involved in the cancerous deposit, forming an irregular oblong mass, several inches in diameter.

The pancreas was strongly adherent to this morbid mass, and contorted on itself, but apparently was not involved in the disease.

The exterior of the mass was smooth, and presented a beautiful arborescent distribution of vessels.

The vessels entering the fissure of the liver, the portal vein and hepatic artery, became involved in this growth, which involved the glands in the fissure of the liver, and were much compressed. The cystic duct was also pressed upon, and the pancreatic duct was distended with glairy secretion. It is not probable that the common bile duct was much compressed.

The *kidneys* were congested, but otherwise healthy; the right kidney was drawn upwards from its position by adhesions of its supra-renal capsule to the under surface of the liver, where it lay horizontally and strongly adherent.

The supra-renal capsules were enlarged, especially the right one, and very hard. Upon being cut open, however, there did not seem to be any abnormal deposit in their walls.

The *spleen* was of normal size, colour, and consistence; there was, however, a firm, cancerous nodule, the size of a filbert, on its edge just under the capsule.

The *intestines* were contracted, rather pale, and presented no adhesions. The mesenteric and mesocolic glands were cancerous, some of them being half an inch or even more in diameter, very hard and of a dull whitish colour on section.

The urinary bladder was healthy.

There was no peritoneal effusion, the cavity being, indeed, almost unusually dry.

Microscopic examination.—The supra-renal capsules did not present any characteristic appearances of cancer.

The nodule in the spleen was of a dense scirrhous nature, with a waxy, dead-white appearance on section. It appeared to have no true fibrous stroma, but contained numerous granule corpuscles, and large cells of irregular shape, oval, round or tapering, with one or two large nuclei, with distinct nucleoli. In addition to these, there were smaller cells, free nuclei, and cells resembling connective-tissue corpuscles.

Stomach.—1. Glands outside of the pylorus were whitish on section; less dense than the nodule in the spleen. The juice obtained by scraping the surface contained a few granule cells, as in the spleen, and irregular granular cells, with one or two large nuclei; nuclei either free or imbedded in a granular stroma.

2. Internal surface of the mass around the pylorus was of consistency of cerebriform cancer, and contained many varieties of cells with one or two nuclei. Fragments of gastric glandules were also seen.

The denser portions of this mass contained the same forms of cells with numerous connective tissue corpuscles, but no regular fibrous stroma.

Liver.—The structure of the liver was quite healthy between the nodules of cancer, the hepatic cells being distinct, with clear nuclei, though perhaps with slight excess of granular fat. The lobulus quadratus presented a most beautiful demonstration of cancer cells, of all shapes, with one, two, or three large nucleolated nuclei.

Contents of stomach.—Quite numerous starch granules, oil globules, very varied forms of epithelial cells; masses of hæmatin; a few blood corpuscles and fragments of vegetable and muscular fibres. No sarcinæ ventriculi were found.

Contents of intestines.—A great deal of hæmatin, in finer granules than in stomach; epithelial cells; granular matter, fragments of vegetable fibres, and very abundant torulæ cerevisiæ.

Dec. 26. Tuberculosis of Lungs, Bronchial Glands, and Abdomen.—Dr. WM. PEPPER read the following report of the case:—

Fanny ——, æt. three, a delicate, poorly developed child, with strong hereditary tendency to tuberculosis, was admitted to Children's Home about Sept. 1, 1866. She was suffering with a mild attack of measles at time of her admission, and after the symptoms of this disease passed over, she continued thin, weak, and without appetite, with occasional cough and looseness of bowels. The diarrhœa resisted ordinary remedies, and reduced her strength extremely; the cough became more troublesome, and from Nov. 6th she was confined to bed.

Her treatment at this time consisted of ol. morrhuæ fʒj ter die; tr.

cinch. comp. f℥ss ter die; a small quantity of stimulus and nourishing diet.

Nov. 16. Abdomen rather distended, but apparently indolent. There is marked dulness in the right hypochondrium, for one and a half inch below margin of the ribs. She has several stools daily, of consistence of mush, dark-coloured and very fetid. Respirations are 64 to 72 in the minute; pulse 150, small and feeble. The entire anterior part of the right thorax is deficient in resonance as compared with the left; this is especially marked over apex toward sternum. There is also dulness over the manubrium. Respiration on right side is accompanied by fine mucous râles; toward the apex the breathing becomes bronchial, mixed with larger moist râles. Posteriorly, respiration is rather harsh and hissing, with fine râles. In the left side, the respiration is exaggerated, but unaccompanied by any abnormal sound, save a few moist râles under the scapula. She picks constantly at her nose, and this morning has a quite free attack of epistaxis; tongue smooth and reddish; no vomiting.

19*th.* Somewhat more comfortable; pulse about 140; respirations 55; percussion yields the same results, but the râles over the right side are rather smaller and less abundant; the cutaneous veins of thorax appear somewhat prominent; bowels still opened three or four times daily; passages very offensive; no more epistaxis.

21*st.* Condition much the same; pulse 140; respirations about 50; the child coughs frequently, but not in paroxysms, and every third or fourth respiration is accompanied by a kind of catch, as though there were some laryngeal or tracheal obstruction. The respirations on the left side are exaggerated and expiration is quite shrill. On the right side, as before noted, small mucous râles anteriorly and postero-superiorly. There is deficient resonance postero-superiorly, but the most marked dulness is over the manubrium and the right apex; the manubrium also appears unnaturally prominent; the stools are rather less frequent and more healthy in character.

30*th.* Rapidly sinking; her pulse more frequent; cough very troublesome; respirations abdominal, but without a sulcus during inspiration around base of thorax; facies changed; deadly pale; picks at nose, but there has been no more epistaxis. Belly doughy, apparently indolent, without tumour; three or four stools daily: results of auscultation much the same, save that râles over anterior part of right side are diminished; over apex, respiration is bronchial. There is to-day, for first time, a beautifully marked cracked-pot sound to the right of the sternum over the second rib. Percussion-note dull over right half of interscapular space; markedly dull over manubrium and inner third of right clavicle.

Death took place December 1st, 1866, three months from the beginning of the attack of measles.

Post-mortem examination twenty-six hours after death.—Brain and spinal cord not examined. *Thorax.*—Heart healthy; foramen ovale closed. *Left lung* free from pleuritic adhesions, crepitant throughout, but contained numerous isolated nodules of crude yellow and gray tubercle as large as peas. *Right lung:* the upper lobes were solid, heavy, entirely non-crepitant. Upon cutting them, the surface was found uniformly grayish, slightly granular, not friable. In places, nodules were of a yellowish colour and softer consistence than the rest; this was especially noticed along the posterior border of the lung, where in one point there was a little collection of puruloid fluid. The anterior parts of the upper lobe, hardly involving the apex, however, had been the seat of a very extensive deposit of yellow tubercle, which had maintained this part of the lung in the position of extreme distension. A large portion of this, however, had undergone softening, so that on removing the sternum and ribs a considerable cavity was disclosed, filled with grumous pus, and having for its walls the irregular nodulated remains of this tuberculous mass. The limits of this deposit could be traced all around it, as the surrounding lung tissue was of a reddish-gray colour, and the seat of marked gray tubercular infiltration. Whether the entire lobe had originally been in the latter condition, and its anterior portions undergone changes and passed into the form of yellow tubercle, could not be positively said. The lung was very strongly adherent all over, but especially over the upper lobe where the pleura had been the seat of tuberculous deposit. Over the vomica, the pleura seemed to be the seat of a similar firm tuberculous deposit. The lower lobe was not so dense as the others, but contained numerous nodules of tubercle, of which those along the posterior border contained more of the yellow form, and were further advanced toward softening. The bronchial glands were considerably enlarged, the largest, however, not much exceeding the size of a large Lima bean, one inch long by half an inch in width. But by their aggregation they formed a mass around the right bronchus, trachea, aorta, and pulmonary artery, about the size of a small hen's egg. The right pneumogastric nerve passed through this, but did not appear to be much compressed. The glands contained yellow tubercle in nearly every instance, the deposit beginning at the centre, and in some instances, occupying the whole gland; in others, however, there was a layer of gland tissue surrounding the tuberculous deposit. One or two of the enlarged glands seemed to be instances of simple hypertrophy. Under the microscope, the deposit in the lungs and glands was found to contain typical tubercle corpuscles; but the enlarged glands in which no tubercle could be seen by the naked eye, could not be satisfactorily determined to contain it by the microscope.

Liver much enlarged, extending fully one and one-half inch below the edge of the right ribs. Marked peritonitis in the left upper part of the abdomen. Peritoneal covering of the spleen and adjacent parietal layer adherent, and gray granulations, intra-serous, were seen upon separating them. Transverse colon and upper part of the descending colon adherent by delicate, readily-lacerated, connective tissue filaments to the adjoining folds of intestine. No tuberculous granulations were detected between them however. These parts were quite wet with serum, but there could scarcely be said to be any peritoneal effusion.

Spleen contained a few very firm yellow granulations.

Small intestine appeared healthy; the mucous membrane of the latter half of the large bowel, however, was reddened, discolored, and softened, evidently in a state of chronic congestion. The colon was distended with flatus. The mesenteric glands were all enlarged, one or two of them being as large as hazelnuts.

The lower part of the abdomen appeared healthy.

Remarks.—The enlargement of the bronchial glands was clearly diagnosed during life from the character of respiration due to the pressure upon the right bronchus and trachea, and from the dulness on percussion in the interscapular space, the occurrence of epistaxis, and the enlargement of the cutaneous veins of the thorax, though this latter symptom was far from being marked, also aided in the diagnosis. Owing to the slight projection of the *manubrium*, however, and the complete dulness over it and the inner part of the right subclavicular space, a suspicion arose that the glands might be more extensively enlarged than at first appeared probable. The development of a cracked-pot sound to the right of sternum over the second rib increased the doubt, owing to the explanation advanced by Dr. Jenner, that not unfrequently this sound is produced here by the intervention of a thin layer of permeable lung tissue between the enlarged glands and the chest wall at the point of percussion. At the autopsy, however, these symptoms were fully explained by the peculiar form of tuberculous deposit in the anterior part of the upper lobe of the right lung.

The latency of the abdominal disease is also interesting; since the peritonitis was evidently recent, and yet did not reveal itself by distension, spontaneous pain or marked tenderness. The looseness of the bowels had continued from the attack of rubeola.

1867. *January* 23. *Recovery from Perforation of the Vermiform Appendix of the Cæcum.*—Dr. WM. PEPPER made the following remarks:—

The subject from whom the specimen was removed, a man about 70 years of age, was admitted to the Pennsylvania Hospital December 1, 1866, suffering from enlargement of prostate gland, with several false passages. He died a few days subsequently, partly at least from considerable hemorrhage into the bladder.

At the *post-mortem* examination six hours after death, which was conducted by Dr. Williams, Senior Resident of the Hospital, the lungs were found healthy; the heart extremely flabby and soft; the liver and spleen apparently healthy.

The kidneys were lobulated, their pelves dilated; the ureters healthy. Bladder enlarged and thickened; prostate gland much enlarged, with several false passages through it. No calculi present in any portion of genito-urinary tract. Abdominal walls loaded with fat. The omentum, mesentery, and meso-colon likewise contained abundance of fat.

Mesenteric glands not enlarged. The intestines appeared perfectly healthy; and presented no thickening of their coats or abnormal adhesions. On raising the vermiform appendix, however, it was noticed to be unusually stiff, and presented on its free extremity a mass of reddish-yellow colloid matter, about the size of a hazelnut. This adhered closely to one side of the appendix, near its termination; was very glutinous when touched, and had no peritoneal investment. The consistence of its exterior was quite soft and gummy; but towards the centre it became more resisting, as though from the presence of some organized tissue; and on cutting it open a delicate trabecular structure appeared in the centre.

When examined microscopically, it was found to contain some crystals of hæmatin; some large corpuscles, with coloured granular contents, and a few large nucleated cells; but the bulk of the mass was composed of small bodies, arranged in close apposition, and polyhedral from mutual pressure, with a very faint tinge of reddish-yellow. These bodies were entirely non-nucleated, and resembled altered blood-corpuscles. Positive proof of their nature was readily obtained by allowing the specimen to soak in water, when the corpuscles swelled up, and many of them regained the typical appearance of red blood-disks. Prolonged soaking caused all the corpuscles to rupture.

Upon laying open the vermiform appendix, its cavity was found obliterated, the part being, in fact, converted into a fibrous cord. At the centre of the attachment of this colloid mass, however, there was a round opening into the appendix about two lines in diameter. The edges of this opening were smooth and rounded, and a probe passed through it appeared immediately in the centre of the colloid material attached to its peritoneal surface. The cæcum around the opening of the appendix appeared perfectly healthy. The appendix had a meso-colon extending along the greater part of its length. Its extremity, however, and the mass attached to it were perfectly free, and if they had originally become adherent at any point, the adhesion had been entirely destroyed, and all traces of it removed.

We have here, therefore, every possible proof of a pathologico-anatomical character, of a previous perforation of the appendix vermiformis. The entire absence of history, and of any foreign body in the abdominal cavity, of course leaves the cause of the accident uncertain. Blood and lymph have been effused, and have prevented the escape of a sufficient amount of the contents of the bowel to excite any considerable peritonitis. Either no adhesions have been formed with the parietes or elsewhere, or they have been so delicate as to rupture under the natural movements of this part of the intestinal canal. The clot has contracted, undergone considerable absorption, and has finally acquired this gelatinous consistence, adhering firmly to the appendix. The small proportion of lymph effused has made the layer nearest the appendix more firm and organized, and has thus more surely closed the opening. The circumstance, however, which has rendered the cure permanent and complete, has been the adhesive inflammation, affecting the entire extent of the cavity of the appendix, and leading to its obliteration, and the transformation of the appendix into a mere fibroid cord.

This case is, I believe, quite unique, as affording post-mortem evidence of the possibility of the cure of this lesion. The probable length of time during which the clot had existed, and yet the blood corpuscles retained their distinctive features, is most interesting. And it may be added, that this case illustrates well the very trifling importance of the appendix, since its entire obliteration appears not to have been followed by any untoward symptoms.

On some Symptoms which follow Sudden Arrest of the Circulation in the Main Artery of a Limb.—Dr. JOHN ASHHURST, Jr., said: "I desire to call the attention of the Society to two symptoms which I have observed in several cases of deligation of the main artery of a limb, and which have been observed by others in cases of sudden arterial obstruction from disease. I refer to *hyperæsthesia* of the part below the seat of obstruction, and *increased temperature* in the same locality.

"It is generally stated by surgical writers that the first effect of the ligation of a large artery, such as the femoral, is a *diminution* of the temperature of the parts below, followed after some hours by an increase of heat, and still later again by a secondary diminution. I have, however, in two cases observed an immediate *increase* of temperature so rapid as to preclude the idea of its being caused by the afflux of blood to the surface in the establishment of the collateral circulation, and only explicable to my mind by taking into consideration the agency of the nervous system, probably a reflex condition being induced somewhat similar to that which produces the increased temperature in injuries of the upper part of the spinal cord. My observations have not been made with the thermometer, and are, therefore, of course, incomplete. My object in bringing them forward at this time is merely to invite others who may have the opportunity to unite with me in their verification.

"The other symptom to which I have referred, *hyperæsthesia*, I do not find generally noticed by surgical writers. I have observed it in three cases in which I have tied the femoral artery for popliteal aneurism; in the case where it was most marked, the excessive sensibility not entirely disappearing for a week or ten days. This symptom was also very prominent in a case of embolism of the common iliac artery, which Dr. Hutchinson reported to the Society in April, 1862.

"The sensory nerve fibres of the part below the seat of obstruction feel the loss of arterial blood (the local anæmia, as it were), and transmit an instant warning to the sensorium. Can we not here recognize a beautiful provision of nature, giving a caution to the patient to avoid pressure or rough handling of the limb, which, in the impaired state of the circulation, might easily produce excoriation and even sloughing?

"I once met with a case of general anæmia, in which the patient could not cross one leg over the other for a few minutes without the upper one 'going to sleep,' in the popular expression; an extremely disagreeable symptom, which fortunately disappeared with the restoration of the general health."

Dr. PACKARD stated that one of the cases referred to by Dr. Ashhurst had been under his care at the Episcopal Hospital, in August last, with a popliteal aneurism in the other limb, for which ligation of the femoral artery had been resorted to. On that occasion, although a rise of temperature was not noted in the limb operated on, it was found expedient to diminish the thickness of the wrapper of raw cotton placed about it within a few hours after the tying of the vessel.

There was not present, however, the hyperæsthesia which was so marked in the other limb, as mentioned by Dr. Ashhurst. There was, and still is, such a condition of the long saphenous nerve, so that if the limb is touched anywhere in its course there is a marked "shudder" induced; but this must probably be ascribed either to a pricking, or to a partial division of the nerve at the time when the vessel was tied. Nothing like general hyperæsthesia of the limb has at any time existed. This difference between the behaviour of the two limbs of the same individual, under similar operations, seems worthy of notice.

February 27. *Supernumerary Rib.*—Dr. WM. PEPPER exhibited a specimen presenting a bifurcation of the fourth rib on the left side. The bifurcation occurred about two and a half inches from the sternum, and each branch was connected with this bone by a distinct costal cartilage. The specimen was removed from the body of a male adult, who died of pulmonary tuberculosis; no other anomalies were discovered.

1867. *March* 13. *Fibrous Tumour of Uterus.*—Dr. HUTCHINSON, in presenting the specimen, said that he was indebted to Dr. James V. Ingham for notes of the case from which the specimen was derived.

Ann M., aged 54, single, tailoress, was admitted into the Episcopal Hospital on the 26th of Nov. 1866, suffering with great enlargement of the abdomen, which seriously interfered with both the functions of respiration and digestion (difficulty of breathing and constipation). Her complexion was generally of a dark red hue, but would often become bluish, at which times respiration was extremely difficult. Physical examination revealed the presence of a large tumour in the abdomen, extending into the epigastric, and occupying all of the hypogastric and umbilical regions, and merging into both right and left lumbar and iliac. There was also an enlargement of both thyroids and the isthmus. During her residence in the hospital she had periodical discharges per vaginam which were hemorrhagic, often losing in this way more than a pint of blood. They were either menstrual or else an evidence of the "*vis medicatrix naturæ*," intended to relieve the intense congestion from which all the organs suffered, and merely obeyed the natural female law of periodicity.

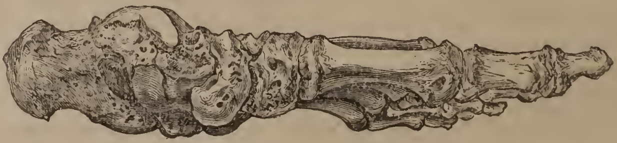
The last of these hemorrhages occurred on Monday, March 4, 1867, fourteen weeks after her admission, and three weeks after her previous one. On Wednesday she complained of great dyspnœa; she suffered greatly from it during the day. Her face was cyanosed, and her body and limbs were of a dark-reddish hue. She had lost about a pint of blood during the three days since her attack. When seen on the morning of the 6th (Wednesday), her extremities were warm, but no pulsation could be detected in the temporal, radial, or tibial arteries. In the evening, about seven o'clock, she became unconscious, and at half-past eight died.

The *autopsy* was made sixteen hours after death, when the following conditions were ascertained: The lungs were much congested, but were permeable throughout; the heart was small, with no lesion except a slight deposit upon the free border of both of the auriculo-ventricular valves. The stomach and intestines were distended with flatus; the liver was greatly congested, but there was no appreciable alteration in its size. The spleen was much enlarged, and upon the upper surface the capsule was thickened, and of a white fibrous character; it was one-sixteenth of an inch in thickness. The kidneys were congested and small. On extending the incision down the abdomen, the tumour was exposed to view; it occupied the whole anterior part of the abdomen, pressing upon the stomach, and distending the lateral walls of the abdomen. The intestines were forced upwards and backwards. The tumour rested upon the vertebral column, and pressed upon the vena cava and aorta, thus impeding the circulation in the lower part of the body. On raising it out of position it was found to be free down to where it was connected to the rectum and surrounding tissue by the peritoneum. The lateral veins supplying it were enlarged to the calibre of nearly one inch. Cutting through the vagina the tumour was found and taken out; it weighed seventeen pounds, and measured twenty-seven inches in circumference at its widest part, and was ten inches in length. The ovaries were posterior to the mass of the tumour; the right one was congested, and contained a large blood-clot; the left one was atrophied, and had attached to it a large cyst, containing a milky-white fluid, which was unfortunately lost, and so was not examined microscopically. On examining the tumour at its vaginal extremity, an opening, which proved to be the os uteri, was seen. It was about half an inch in diameter, and with extremely thin walls; the cervix was totally obliterated. Extending the incision upwards, the immediate exterior of the tumour was exposed; it was slightly adherent to the much-distended and very thin wall of the uterus, connected to it by soft and friable bands of fibrin. The uterus was readily separated from the tumour up to its fundus, where it was firmly adherent posteriorly. Cutting it open, a firm, grayish, and apparently fibrous structure appeared to constitute the entire mass, with the exception of a small portion of its interior, which was filled with a yellowish white substance of not quite so dense a nature.

Dr. William Pepper, who had made a microscopic examination of the tumour, said that it was fibro-nuclear in its character. The yellowish-white substance was found to have undergone fatty degeneration.

March 27. *On the Structural Changes in a Specimen of Flat-Foot.*—Dr. HARRISON ALLEN made the following remarks:—

The bones of the left foot, removed from a negro subject from the dissecting-rooms of the University of Pennsylvania, were found to possess the following peculiarities: The dorsum of the foot was but slightly arched, the surface of the cuboid being actually below the level of the cuneiforms. The astragalus, viewed relatively to other portions of the tarsus, was elevated; but its position in comparison with the same bone of a normal foot, was somewhat depressed. The plantar surface was characterized by an unusual prominence of the region giving origin to the calcaneo-scaphoid ligament, of the inferior surfaces of the astragalus, scaphoid, and internal cuneiform bones. The inner border was straight to a point opposite the posterior border of the internal cuneiform, but beyond this it was thrown in a conspicuous prominence formed conjointly by the scaphoid bone and head of astragalus. (See figure, in which it may be remarked that the first metatarsus and first phalanx of the great toe are represented as disproportionately large.)



The apparent cause of the deformity was in the head and neck of the astragalus. The head was pushed downwards, and the neck was almost obliterated—the latter measuring but four millimetres upon its inner edge. The lower half of the articular surface, with the scaphoid line, was exposed upon the plantar aspect, and separated from the upper half by a shallow groove. The latter portion was articulated with the lower half of the scaphoid bone, while the remainder had formed a new, irregular opposing surface to the scaphoid at the expense of the inner portion of the head and neck of the astragalus. The contour of the scaphoid bone was altered at the points of contact with the abnormal surface above mentioned, while its facets for the cuneiform bones were unusually well defined. The internal cuneiform, with the exception of the inner surface, being more concave than usual, was not changed. The calcaneum was somewhat inflated upon its inner surface, and irregularly grooved upon its outer, where, at its articulation with the cuboid, two minute exostosed points were seen. The inferior extremities of both tibia and fibula were hypertrophied, and showed evidences of periosteal excitation. This was especially conspicuous upon the external malleolus, and extended thence along the borders of the interosseous space. The right foot was normal.

Extensive Encephaloid Cancer of the Subserous Tissues of the Peritoneum and Pleura. Intensely Bronze-coloured Skin. Supra-renal Capsules healthy.—Dr. MITCHELL exhibited the specimens, and gave the following history of the case from which they were derived.

Mrs. B., æt. 62 years, after many years of fair health, untroubled except by habitual constipation, began to suffer about eighteen months ago with an increasing difficulty in her lower bowel. At the same time she had so much nausea as to induce the belief that she had an organic disease of the stomach, while her tint, her emaciation, and the presence of a tumour in the left iliac fossa, led her attendants to suppose that both sets of symptoms were alike due to cancer. Up to Oct. 23, 1866, when I first saw her, she continued to have great constipation; occasional vomiting and more constant nausea; at times pain low down in the back, but none elsewhere; with a good deal of insomnia.

At this above date Mrs. B. was thin, sallow, and much exhausted by a long journey from the North. After a number of ineffectual efforts I succeeded in getting her bowels somewhat regular by giving aloes, three times a day, in doses of two or three grains. The nausea was relieved and hereafter kept in check by a succession of small blisters over the pit of the stomach, at the same time she received a generous diet, and more or less wine or brandy.

After a temporary rally, she began to decline anew, about December 1, 1866, and thenceforward experienced an increasing amount of constipation and pain in the back, with now and then attacks of flatulent colic relieved by the escape of wind.

About Oct. 1, soon after her arrival here, I made several attempts to ascertain the condition and size of the tumour said to exist in the left iliac fossa, but failed to satisfy myself on account of the large amount of gas in the intestines. When at length I succeeded, I found that I could detect in the left iliac fossa a rounded mass which I could almost seize from above when I pressed the perineum and rectum upwards with my left hand. The forefinger encountered no resistance in the rectum, as far as I could touch with it, but a rectum bougie failed to pass up the gut further than just beyond where the finger could reach, while also I found that not more than four ounces of water could be thrown into the gut, unless an unusual length of time was employed. The feces were small and round, and hard, not flat. A sound entered the bladder easily and could be freely moved therein, while the water was retained, at least two or three hours. Even up to the last she could hold it half an hour or more. The womb appeared to be healthy to the touch. A womb sound could be readily passed into the uterine cavity. No other tumour was anywhere detected, and the thoracic viscera were also healthy.

The mass described continued to grow, and as the constipation increased it became impossible to tell what was fecal accumulation and what was new growth of diseased tissue. At the same time fluid began to collect in the peritoneum, and this also added to the difficulty of defining the disease. During three weeks before death, Mrs. B. passed in all but three small scybalæ. Despite this absolute stoppage of the intestine she had no vomiting, and needed no blisters during the last month of her life. The water also continued to pass in fair amount, a pint to a pint and a half daily, illustrating Dr. William Brinton's remark upon the relation between amount of urine and the site of the intestinal obstruction.

The pain in the small of the back became a prominent sign during the last forty days, and to it was superadded first, pain in the left crural nerve distribution, and finally in that of the right side, marking, I suppose, the intrusion of the tumour into the right iliac fossa. The sacral and lumbar pain was always eased by frictions, and by internal use of meconate of morphia. Only once was a subcutaneous injection needed to allay the distress. The crural pains were more rare, and usually came on about noon, but the whole left leg was oftentimes so hyperæsthetic that the touch of the clothing became painful. During the last two weeks the urine was feebly albuminous, with pale granular tube casts.

The state of the skin offered a most interesting study. Early in November I first noticed that the scar left by the blister was unusually dark. Within two weeks I began to see a change of tint in the skin, which, previously sallow, now became of a leathern colour. This hue increased in depth as she advanced in her disease until the face, hands, arms, and bosom exhibited a tint as dark as that of old leather. The bronzing, as I suppose it should be termed, was most intense on the face and where the blisters had been, and was a general colouration varied by large islets of deeper tint. Towards the feet it faded to a white clear skin. On the hands it occupied curiously the depths of all the lines of wrinkle on the palm, so that it looked as though these members had been dipped in muddy water, and hastily dried, leaving lines of yellow in the creases. The nails were some of them marked at their outer ends, just below the quick, by a band of pigment. During her whole illness Mrs. B. also suffered with a slight eczematous affection, the scars of which were notably stained of a deeper tint than the skin about them.

With increasing pain in the back, and a good deal of dyspnœa, and sense of uneasiness in the abdomen and with great emaciation, the approach of death was preceded about two weeks by a rapid and singular diminution of the amount of pigment in the skin; I think that it lessened one half. Mrs. B. became insensible early on Feb. 27, and died at three o'clock A. M., Feb. 28.

I had diagnosed her case as cancer pressing upon, and probably involving the rectum.

I presumed that we should also discover disease of the supra-renal capsules. I did not suppose that there was any cancer of the stomach.

Cadaveric section, by Drs. Keen and W. Pepper, present Dr. Packard, thirteen hours after death. Excessive emaciation. The colour in the skin is irregularly distributed, least on the feet, most on the anterior fold of left axilla. Marked at same site on right side, less on arms, and least on dorsal aspect of humerus. The abdominal surface rough, and covered with bran-like scales, and uniformly tinted, except where the five blisters marks present an intense colouration. The face was lighter tinted than the chest, but had no patches such as were seen over the right, greater trochanter of femur, left gluteal region, and neck. The external genital parts were deeply bronzed in hue. Abdomen rounded and fluctuating. Through the anterior walls could be felt rows of rounded bodies, presumed to be hard feces, and proved finally to be these, and also cancerous masses, but undistinguishable from one another when felt from the outside.

About one quart of yellow serum in peritoneum; absolutely no lymph or adhesions above the pelvic brim. The pelvis was filled with a cancerous mass, which inclosed the left ovary, but respected totally the womb and right ovary with its appendages; neither did it involve the thickness of the bladder walls, nor those of the great intestine, which it strongly compressed. The interior linings of the two latter viscera were simply congested, but not ulcerated, hence absence of the usual discharges which accompany many rectal cancers. On the left, between the uterus and sacrum, was a sac some four inches wide full of serum; two like cavities were found, one higher up and one on the right side of the mass. Above the pelvic brim we found numerous round cancers, lying on the folds of the mesentery; two large ones, two inches in diameter, in the meso-colon, and others of equal size in the great omentum and gastro-splenic omentum. At the angle of the diaphragm and right lobe of liver was a tumour four inches across. Stomach healthy. Small cancers lay around the gall-bladder, but did not enter the surface of the liver. Gall-bladder full of gall-stones, and atrophied so as to be altogether out of use; common duct and hepatic duct pervious.

Kidneys.—Right, normal; on its peritoneal face there was a firm white mass of cancer, ½ inch diameter. Left kidney and pancreas normal.

Lungs.—Slight adhesions at both apices, about a pint of serum in the two pleuræ, most in left; at right apex was a mass of induration, which was probably altered lung, and was dotted with cretaceous particles. In the furrow between the upper and lower lobes, 1½ inch from posterior border, we found a cancerous body ¾ inch in breadth, and lying immediately beneath the pleura. Several smaller masses of like nature were found at other points below the pleura. Throughout the upper lobe were also numerous shot-like calcareous masses. Lung tissues otherwise normal; bronchial glands unaffected. Left apex had like hardening, but less than on right, and contained no calcareous masses. Lung otherwise healthy.

Heart.—Incipient atheroma of aorta; slight thickening of right and left auriculo-ventricular valves.

The supra-renal capsules were healthy except a little fatty alteration, such as is commonly found after middle life.

I append the microscopic examination which Dr. Wm. Pepper was so kind as to make.

Microscopic examination. By Dr. WM. PEPPER.—*Skin* normal in all respects save its coloration; which depended partly upon a general staining of the whole tissue, partly upon a deposit of dark granules in angular lines, apparently following the ridges of the skin. *Lungs.*—The indurated tissue at right apex, surrounding the little calcareous nodule, presented appearances of condensed lung structure, the air-vesicles being entirely obliterated; no distinctive appearances, however, of either cancer or tubercle.

The various cancerous nodules—those in pleural cavity, those in the omenta of the abdomen, and those attached to the surface of the spleen and liver, as well as various parts of the large mass involving the left ovary—uniformly presented a most varied and complete demonstration of cancerous elements. There was an almost entire absence of any true fibrous stroma, the cells appearing packed in close apposition. These cells were of the most varied size, and contained from one to four nucleolated nuclei. But few true mother-cells were seen.

The supra-renal capsules presented no evidences of cancerous degeneration, the grayish matter in their cavity being merely a collection of small fat globules, with granular debris and some small imperfect cells, apparently the result of fatty degeneration of the contents of the gland, with a portion of its glandular lining.

The costal cartilages did not appear of an unusual colour; they were, however, undergoing ossification, and the intercellular matrix was much more dark, granular, and striated than it is normally seen to be.

April 25. *Small Intestinal Concretion in the Appendix Vermiformis Cæci; Ulceration and probable Perforation of the Appendix; General Peritonitis; Death after five days' duration of the Acute Symptoms* —Dr. Wm. PEPPER related the following case:—

W. W., æt. 29, of very robust health, by occupation a farmer, living in a healthy district in Pennsylvania, was first confined to his bed Wednesday, May 21, 1866. He had not, however, been feeling well for a few days previously, but as his symptoms were merely general and vague uneasiness and some languor, he hardly alluded to them, and continued to work in the fields until Tuesday noon. On Wednesday, he suffered with colicky pains in the abdomen, and nausea, for which he took a dose of calomel, followed by castor oil. This dose produced one or more free stools. On Thursday the colic and nausea were increased, but no vomiting occurred. The pain in the abdomen was violent, spasmodic, but not referred to any particular point. There was some meteorism of the abdomen, but little tenderness. The tongue was heavily furred, the eyes cholæmic, and the urine tinged with bile pigment. He took laxative medicine, which brought away some fluid fecal matter, without blood or inflammatory product. Carminatives and counter-irritants were also employed. On Friday, symptoms of collapse began to appear, and there was more positive evidence of peritonitis. On Saturday, the nausea continued, but still without vomiting. Bowels rather costive; belly tympanitic, with tenderness, most marked in the right iliac fossa; countenance anxious, and more marked collapse. The treatment consisted in free stimulation and the use of opium in large doses. On Sunday, he sank rapidly; the face became pinched, the abdomen still distended, but less painful; nausea, but no vomiting; the pulse was rapid and thready. Death occurred at noon, five days from the development of acute symptoms.

Post-mortem examination was made sixty hours after death, the body having been well preserved in ice. The thorax and abdomen were alone examined. The lungs and heart were perfectly healthy. The ensiform cartilage was bifid. The liver was congested, but healthy; the gall-bladder distended with bile, but contained no gall-stones. The duodenum and structures adjacent to the gall-bladder were deeply stained with bile. The stomach was healthy, as were also the spleen, pancreas, and kidneys. Upon opening the abdominal cavity, the great omentum was found drawn down over the intestines, so as to conceal them from view, and adherent to the anterior walls of the pelvis. It was thickened and opaque. In the right iliac fossa, the lower edge of the omentum was doubled upon itself, and so agglutinated as to form a nodule about an inch and a half long, and two-thirds of an inch in diameter. Upon loosening this from its attachments, it was found to inclose the vermiform appendix for about half its extent. This part of the omentum, besides being agglutinated, was deeply ecchymosed. The convolutions of the small intestines were in many places adherent by soft bands, and small collections of pus were found between the folds. The peritoneum throughout was much injected, and in places had an appearance of excoriation, though these conditions were much more marked towards the right iliac fossa. The adhesions of the large intestine to the iliac fossa were preternaturally strong, and the ascending colon was the seat of intense peritonitis. Under the cæcum, in the right iliac fossa, was a considerable collection of offensive grumous matter. The peritonitis did not extend to the higher part of the small intestine or to the transverse colon, but involved all the intestines in the lower part of the abdomen, and the sigmoid flexure and rectum. The pelvic cavity contained several ounces of pus. The mesenteric glands, opposite the ileo-cæcal valve, were enlarged and florid. The vermiform appendix was evidently distended, much discoloured by intense congestion, and, at two places, was tightly adherent to a loop of ileum, just at the point where it entered the cap of thickened omentum above mentioned.

On separating these attachments, the opposed surfaces each presented an ovoid layer of grayish lymph. This lymph could be peeled from the ileum, leaving its peritoneum intact. Upon opening the vermiform appendix, a body, of the size of a small pea, was found towards its free extremity. Its cavity did not communicate freely with the cæcum, on account of adhesions of its mucous surfaces together. The true cavity of the appendix contained some grumous pus, and showed several deep ulcers in its walls. The largest of these, about half an inch in diameter, correspond to the layer of lymph upon its peritoneal surface, by which it adhered to the ileum, and extended through all the coats of the appendix, excepting possibly the peritoneal. It seemed probable, however, that a complete perforation had here taken place, with slight escape of the contents of the appendix, and that then adhesion by inflammatory exudation had ensued with the fold of ileum. The inflamed omentum forming a cap for the end of the appendix had also served as a support and protection. The peritonitis had evidently spread from this point, and the symptoms accord well with this mode of development; the ill-defined symptoms of the early days corresponding to the period of disease in the appendix alone, and then the graver and rapidly fatal symptoms indicating the spread of the inflammation. The body in the appendix, when dried, proved to be a small intestinal concretion, light-coloured, friable, incrusted with mucus, but containing no mineral matter. The intestines themselves were distended, contained some semi-fluid, highly coloured feces; the mucous membrane was healthy, even at the opening of the appendix. //

Rupture of the Bladder.—Dr. JAMES V. INGHAM read the following case:—

Daniel P., male; Ireland; age 34; married; clerk; came to the Episcopal Hospital on April 10, 1867, for admission. When first seen by me he was sitting in a chair, with his body thrown forwards, and his knees slightly raised; face pinched and anxious. He stated that, sixteen hours before, he was playing with a friend, and was thrown down and jumped upon. Immediately succeeding the jump, he felt a sharp pain shoot across his abdomen, and, as he expressed it, run up to his heart, almost choking him. A short time afterwards he passed a large quantity of blood from his bladder, which gave him great pain in passing. Two or three times subsequently, and previous to his application for admission, he again passed blood. When admitted he was in great pain, which was increased by the slightest motion, and which produced the choking sensation before noticed. His abdomen was moderately distended, and extremely sensitive upon pressure. About one inch below the umbilicus, and a little to the left, there were three or four abrasions in a crescentic form, which were apparently caused by the nails of a boot-heel, the concavity of which looked outwards and downwards. Upon the loins there were also some slight bruises. As he complained of a great desire to pass water, and was unable to do so, the catheter was passed, and about eight ounces of urine, much discoloured with blood, was drawn off. This gave him temporary relief, but its repetition was necessary about every three hours during the night; the character of the fluid changing in no respect. A few hours after his admission he was seized with violent retching, for the first time, which was obstinately persistent, excited by everything swallowed, and by every motion of the body. It lasted until his death, almost without abatement.

On the morning of the 11th there was no change, except that he complained of great thirst, every attempt to satisfy which brought on the retching, until he was given carbonated soda-water to drink, which allayed both for a short time. All stimulus and nourishments had to be given per rectum, and in quantities not exceeding f℥j, or they could not be retained. During the day he passed his bloody urine voluntarily, and appeared to be much easier; the retching, however, still continuing until late in the afternoon, when he had a return of the paroxysm of acute pain, accompanied with the same choking sensation. Morphia was administered hypodermically, after which his pain left; nor did it return during his life. The morning of the 12th found him sinking, partially delirious and extremely restless, with the evidence of death in the injured parts. He lingered in this condition until the next morning, April 13, when he died in a fit of mania. He had been a hard-drinking man, and was partially intoxicated when admitted.

Eight hours after death his body was examined with the following results: Abdomen distended; no discoloration of the skin except where bruised. The intestines were firmly glued together throughout their entire length, and were in some places very much congested, especially in those parts which corresponded in position to the external bruise. The cavity of the abdomen contained a large quantity of bloody fluid of a highly urinous smell, and the bladder was found to be ruptured through its peritoneal coat posteriorly, and extending across its body. The bladder and a portion of the bowels were much darkened, and were evidently undergoing putrefactive change. There were no other lesions, except a few clots of blood found just below the liver, and which were supposed to come from a ruptured vessel, but of which no trace was found.

Dr. W. S. **Forbes** remarked that the case just reported by Dr. Ingham, the Resident of the surgical wards of the Episcopal Hospital, came into the house during my term of service. It suggested several points of interest. It is manifest that in cases of rupture of the bladder, occasioned either by direct violence applied to the abdominal wall, or by general concussion of the whole frame, or by spontaneous rupture so called—that is, rupture from over-distension, when some mechanical impediment prevents the evacuation of the urine—the laceration of the organ takes place at that point where the viscus is least supported. (I speak now of rupture or laceration as an individual injury, not associated with and not accompanied by other complications, such as fracture of the bones of the true pelvic basin, or gunshot and other wounds.)

I confess to the belief that in such cases of laceration the viscus will be found to have been distended with urine at the time of the accident to a greater or less degree, as in the case just reported. Let us take the cases of spontaneous rupture, or laceration by distension. Resting on the dense fascia, connective, and muscular tissue of the pelvic floor, supported behind, on either side, and to a lesser extent of surface in front by the bony walls of the true pelvic basin, the distended and enlarging viscus has the superior portion of its body taken upwards and forwards by the increasing urine; it rises above the margin of the superior pelvic strait, thus indicating that in this direction resistance is less than on its floor or its sides. The violence continuing from within by the increasing urine unable to escape below by the urethra or otherwise, will cause the bladder to elevate the weight of the intestinal mass in the abdomen, and at the point where this weight or pressure is least the bladder will become most distended, until its already thinned walls yield—its muscular tunic first, the mucous second, its areolar third, and its peritoneal last; or it may be that its peritoneal tunic will be dissected up from its attachment and not ruptured at all, or at some point distant from the opening in the neighbouring tunics. And it is impossible to say, on account of the varied movements which the intestines enjoy, where the point of pressure is greatest; and therefore the exact seat of rupture on the upper part of the bladder cannot be indicated in these cases. It may be just by the margin of the lumbar vertebræ, or near the abdominal walls in front or on either side; suffice it to say it is at that spot where resistance is least, and at which the bladder is most distended, and not at that point where support or pressure is unyielding.

In cases of rupture from concussion of the frame, as where the patient has fallen from a height, the bladder is invariably found to have been more or less distended. The viscera of the abdomen, owing to their pendulous position, coming violently in contact with the upper surface of the bladder, its wall will be lacerated by the pressing intestine, causing the urine to rise by its side to such a degree as to make the vesical tunics give way at the most elevated point of distension; or it may be that the tunics will be torn by being drawn over the upper surface of the urine in the bladder at the moment of contact with the earth.

In cases where direct violence is the cause of rupture, the offending body pressing on the bladder, more or less filled with urine, causes the urine to distend the wall of the bladder at the least resisting point to such a degree that laceration takes place. This may be, and generally is, by the side of the offending matter, but not immediately under it; the urine is the agent which lacerates the tunics. In the case before us the man was kicked on the abdomen, and the rupture is on the *superior posterior* aspect of the bladder, just *above* and to the right of the promontory of the sacrum.

In little boys and growing children, there being but little urine in the bladder at any time, owing to the frequency of micturation, and to the fact that the bladder is more nearly in the abdomen—especially when it contains a little more urine than ordinary, and consequently less firmly supported by the pelvic surroundings than in the adult—its rupture from direct violence and from concussion is comparatively very rare. The movement of the entire viscus, when violence is applied, lessens its liability to rupture at any one point more than another.

M. Houël[1] has stated in his collection of thirty-seven cases of rupture of the bladder by external violence, that twelve were on the anterior aspect, and without laceration of the peritoneum; that fifteen were on the posterior aspect, and nearly all communicated with the peritoneal cavity; three were lateral, two without and one with peritoneal rupture. In two cases the seat of rupture is not stated, but communicated with the peritoneal cavity; three were double. It would appear, therefore, that rupture in such cases takes place nearly as frequent on the anterior as the posterior aspect—but not on the surface, supported by the pelvic basin—in other words, the laceration occurs on the *yielding* surface; and, I believe, where on this yielding surface will depend on the least resisting part.

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[1] Houël, Des Plaies et des Rupture de la Vessie, Thèse de Concour. 1857.

M. Houël has collected seven cases of spontaneous rupture, so called; six of these were at the posterior, and one at the superior part of the bladder. He speaks of them all as being half peritoneal, the muscular and mucous coats only being ruptured.[1]

The fact that the bladder is distended to a certain degree when ruptured, thus allowing a highly irritating fluid, the urine, to escape directly into the peritoneal cavity, or immediately beneath the membrane, adds greatly to the cause of a fatal issue in the event. The patient feels that something hot is going all over the abdominal viscera. The shock is great and somewhat continued. The reaction is rapid when once set in, and continues severe. The termination is usually fatal from peritonitis, which is generally extensive, though the bladder itself is not inflamed correspondingly.

The cause of the peritonitis is the escape of urine through ruptured walls of the bladder into the peritoneal cavity, or immediately beneath the membrane; and it appears to me to remove that which has already escaped, and to prevent any future extravasation are the points to which the surgeon should direct his attention. In cases of gunshot wounds of the bladder, where the recovery is more frequent than in the cases of rupture now under discussion, I believe the comparative success is owing to free vent being given to the urine. I think, therefore, that to make an incision into the bladder, as in the lateral operation for stone, would be proper in certain cases, and had I seen this patient soon after his accident I should have submitted to him the propriety of doing so. The fact that bloody urine, in considerable quantity, was taken from him by means of the catheter, that it would then stop flowing, and, in certain positions of his body, would run again; that the man had the sensation of something hot being poured over his abdominal viscera; his prostration, and the history of his accident, all indicated the nature of the lesion. To have given the urine, both that which was in his bladder and that in his abdominal cavity, and that constantly secreted, a free vent, seems to me eminently proper.

Mr. Syme, in the *Lancet* of 1848, p. 289, relates a case in which a boy, attempting to leap over a railing, fell forward, and violently struck his abdomen against a post. With the catheter four ounces of bloody urine were drawn off. There was great collapse. Leeches, fomentations, and an opiate were prescribed. For two days the distension of the abdomen increased, and the catheter continued to draw off bloody urine. On the third day an obscure fluctuation below the umbilicus was observed, and Mr. Syme made an incision into the linea alba; the fluid which flowed out was distinctly urinous. Two days afterwards the incision was enlarged, and a slough of cellular tissue escaped, and Mr. Syme felt the opening into the bladder. This patient entirely recovered.

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[1] See Nélaton, Elem. de Pathol. Chirurg., 1858.

Mr. Chaldicott likewise related a case in which a man, fifty years of age, ruptured his bladder by running against a post. No urine would flow at first, but eighteen hours after the accident Mr. C. drew off, with the catheter, an ounce of bloody urine. Peritonitis set in, and was treated with opiates, leeches, and fomentations. Six days after the accident, and while improving, he made an effort to pass his water himself without the use of the catheter, and something gave way, and he had the symptoms of rupture of the bladder afresh. He was again put under the same treatment, and ultimately recovered. (See *Lancet*, Oct. 1846.)

Rupture of Heart.—Dr. Packard presented the specimen for Dr. THOS. J. YARROW, and then read the following:—

F. M. L., aged 34 years, having suffered for several months with occasional attacks of dyspnœa, became alarmed at their increasing frequency, and summoned me to see him Feb. 7, 1867. In addition to these attacks he complained of a slight cough, and feeling of constriction across the upper portion of his chest, with moderate expectoration of glairy mucus. Complexion, pale; pulse rather weak, but regular; tongue clean, and bowels regular. He stated that he had lost flesh. (Had been treated for phthisis.) Had long been habituated to the immoderate use of whiskey.

I examined his chest carefully, but was unable to detect the slightest evidence of cardiac trouble, other than the somewhat enfeebled action of the heart corresponding with his debility. His respiration was entirely normal, when I saw him. He spoke of having experienced sensations as if something were "tearing" within his chest, at times. Was not subject to palpitation of the heart. Prescribed general tonics and the following mixture: Potass iodidi ʒij; tinct. lobeliæ f℥ss; syr. aurantii f℥ij; aq. font. f℥ijss.—M. Sig.—A teaspoonful every four hours. I had intended to see him again, but received a message to the effect that he was completely relieved, and, therefore, did not repeat my visit. April 9th (about two months subsequently), I was called to visit him, in great haste. Not receiving the message until 2 P. M. (it having been sent at 11 A. M.), I did not reach Mr. L. until three hours had elapsed, and found that he had expired. His sister stated that he was preparing to go out for a walk, and, whilst endeavouring to get his foot into a tightly-fitting boot, he suddenly fell from his seat, gasping and struggling violently for breath, his face becoming livid. He remained in this condition, gradually growing weaker, for two hours, when death ensued.

Post-mortem forty hours after death (was unable to procure it sooner).—Cadaver well preserved. Upon opening the chest the pericardium was observed to be greatly distended by firmly coagulated-blood, which had issued from the heart through a small rupture of the left ventricle near the apex. The heart was greatly softened throughout its entire structure, and especially at point of rupture. Valves healthy. Aorta normal, with no atheromatous deposits. Lungs perfectly normal.

1867. *June* 13. *Autopsical Illustrations of some points in Cerebral Pathology.*—The following paper was communicated by Dr. GEORGE MARTIN, of Chester, Pa.:—

Sixty autopsies were made in the U. S. A General Hospital at Chester, Pa., during the summer and fall of 1863; and in many of them important lesions within the cranium were found. The following fifteen cases were selected because their wounds were distant from the head, and those among them unwounded had been suffering from diseases that had no connection with the brain. Some apology may be due for thus noticing them, as they only assist in confirming what has already been often asserted, viz., the frequent production of inflammation of the serous membranes, and especially of the arachnoid, by an ichor-poisoned blood; but it is a subject of great importance, and one of which all may not be fully cognizant. There is no tissue of the body which suffers more frequently from inflammation than the serous, and oftentimes without the symptoms at all betraying it; and in the cases now brought to notice, but few of them presented any indication of the lesions taking place until a few hours before death, and in a number of them such a complication was entirely overlooked. Most of them were treated by other surgeons, and not seen by the reporter, until carried to the dead-house, and but few notes of their symptoms and treatment were even available. There was, however, one condition of the bodies noticed, which was very characteristic of their condition, viz., a drawing downwards and inwards of the toes and metatarsal bones, giving the feet a peculiar arched appearance. This symptom I have several times observed during life, in cases of spotted fever, and in one of the latter, where it was well marked, the patient recovered; but I have never seen it in the dead subject without finding arachnoid effusion.

CASE 9. *Partial Gunshot Fracture of the Femur.*—The body was in good condition, and the adipose tissue well developed. There were numerous recent pleuritic adhesions, but the lungs were healthy. The heart was large and soft. The spleen was very large. The femoral vein was full of pus, and its internal coat softened; there were several coagula in the ascending cava, and the medulla of the femur was inflamed; there was an effusion of serum into the ventricles and under the arachnoid, which was opaque and adherent.

CASE 13. *Gunshot Fracture of the Head of the Humerus, with Complete Destruction of the Articular Cartilages.*—There were small abscesses in both lungs, and part of the upper lobe of the right anteriorly was solidified. There were two ounces of serum in the pericardium, and fibrinous clots in both ventricles of the heart; that in the left extended along the aorta for about twelve inches. The brain was congested, especially at its base, and there was effusion into the ventricles and arachnoid, with opacity of the latter.

CASE 14. *Gunshot Fracture of the Astragalus, comminuting the bone, which was bathed in pus.*—There was opacity of the arachnoid, with effusion under it, and into the ventricles of the brain. No other lesion was noted.

CASE 28. *Gunshot Fracture of the Head of the Fibula, and Partial of Head of Tibia, with a Dissecting Abscess of the Thigh and Leg.*—There were recent pleuritic adhesions on both sides of the chest, and an old and very firm one under the right nipple. There were adhesions of the arachnoid, with opacity and the effusion of serum.

CASE 41. *Gunshot Wound of the Upper Part of the Thigh, with Caries of the Femur, and a Dissecting Abscess.*—There were adhesions of the right pleura, and a large effusion into the ventricles of the brain, and into the arachnoid, which was opaque.

CASE 44. *Amputation of the Left Leg for a Gunshot Fracture.*—There was slight effusion into both pleuræ, and half an ounce of bloody serum in the pericardium. There was fatty degeneration of the heart, and softening of the muscular structure; the kidneys were pale and soft; the spleen was enlarged and softened, crepitating under the finger; the lining membranes of the arteries and veins were stained red, and the latter were full of gas; the substance of the brain was much softened; the ventricles contained bloody serum, and there was thickening and adhesions of the arachnoid, with effusion. This examination was made on the 17th of September, and though the period after death was not noted, it could not have been more than twenty-four hours, as the autopsies were made daily; therefore decomposition was remarkably rapid, and probably had commenced before life was extinct.

CASE 45. *Chronic Dysentery.*—The liver was apparently healthy, the spleen very small and hard, and the colon and rectum inflamed and ulcerated. There were numerous recent pleuritic adhesions on the right side, and a few on the left. The lower portion of the right lung contained an abscess, and calcareous granules as large as wheat grains were scattered over its anterior surface; there was subarachnoid effusion, with adhesions of its opposing surfaces.

CASE 46. *Amputation of the Right Leg through the Middle Third, for a Gunshot Wound.*—There was periostitis of the femur, extending four inches above the knee; also of the tibia, with complete destruction of its medulla. The knee-joint was full of pus, and the semilunar cartilages were softened. The right pleura contained a quantity of pus, and was adherent in some places. The right ventricle of the heart was thin, and its cavity full of light, greasy-looking coagula. The liver and kidneys were pale and soft. There was effusion into the ventricles of the brain, and also under the arachnoid, with numerous attachments of the latter.

CASE 47. *Partial Gunshot Fracture of the Tibia, near its Head.*—The bone was deprived of its periosteum for six inches of its upper end, and a large dissecting abscess extended from midway of the leg to the groin. The cavity of the knee-joint was opened, and the cartilages destroyed. There was effusion into the ventricles of the brain, and also under the arachnoid, with adhesions of the latter. The pleura was slightly adherent at the top of the left lung, and much more so on the right side; and in this cavity there was an abnormal quantity of serum, with shreds of lymph floating in it. A large lobulated abscess was found in the right lobe of the liver, containing about twelve ounces of pus; the remainder of the organ was pale and soft.

CASE 49. *Gunshot Fracture of the Left Ilium, the ball having passed through the pelvis.*—The ring finger of the left hand had been amputated, and a palmar abscess had formed and completely destroyed the carpal and metacarpal articulations of the finger. The body was jaundiced; the liver was large, dark coloured, and softened; the spleen large and soft; the kidneys pale and soft. The cavities of the heart, and the connective tissues about the abdominal organs, contained gas; the right pleura contained eight ounces of fluid resembling pus; the left three ounces, and the pericardium two, of bloody serum. There was also subarachnoid effusion, with adhesions.

CASE 50.—*Gunshot Fracture of Left Ilium, with Destruction of the Hip-joint by an Abscess, which extended around to the pubis.*—The body was jaundiced; the liver very large and soft; the spleen much enlarged.

The left pleura contained twelve ounces of pus; the ventricles of the brain were filled with serum, which was also effused beneath the arachnoid, and the latter was opaque and adherent in many places.

CASE 51. *Amputation at Knee-joint for a Gunshot Wound of Leg.*—There was general anasarca. The left pleura contained two quarts of serum; in the ventricles, and beneath the arachnoid, there was a considerable quantity; and there were adhesions of this membrane. No other lesions were noted at the examination; but as the dropsy was so considerable, it is not improbable that some were overlooked. The case is introduced because the arachnoid adhesions prove that inflammation of that membrane had existed.

CASE 52. *Chronic Dysentery.*—The mucous membrane of the stomach was red and thickened; the liver was large, and contained four abscesses from the size of a shellbark to that of a walnut with its hull. The kidneys were pale and soft; the colon and rectum ulcerated, the ulcers being half an inch in diameter. There were very numerous adhesions of the left pleura; the ventricles of the brain and the subarachnoid tissue contained an abnormal quantity of serum, and the membrane was adherent; the blood was fluid.

CASE 56. *Amputation of the Thigh, for a Gangrenous Stump of the Leg.*—The right pleura contained twenty-four ounces of a purulent looking fluid. The right lung was covered with soft lymph; its lower lobe was solidified, and contained numerous small abscesses; there was also an abscess in the posterior part of the left lung. The heart contained fibrinous clots in both ventricles; the liver was large, soft, and light-coloured in spots; the left kidney was very much enlarged, pale in colour, and contained small abscesses in its lower end; the right kidney was also pale; the femoral vein was inflamed, and contained firm, white coagula, and one was found in the left emulgent vein. There were adhesions and opacity of the arachnoid, with large effusion.

CASE 60. *Chronic Diarrhœa.*—There was a large, greasy looking, fibrinous coagulum, six inches in length, commencing in the left ventricle and extending into the aorta. There were six ounces of slightly opaque serum in the left pleura; the lung was adherent to the diaphragm and back of the thorax; the liver large, and fibrous under the knife, its surface mottled, and very dark in spots. The spleen was enlarged; the bowels agglutinated together by peritoneal attachments; the descending colon a fourth of an inch thick, extensively ulcerated; the pia mater congested, the sinuses full of blood; the arachnoid opaque, with numerous adhesions, and serous effusion beneath it and into the ventricles. The body was much emaciated, and spotted with petechiæ.

Gastric Ulcer; Death from Exhaustion.—Dr. GEO. PEPPER exhibited the specimen, and said: J. D. R., æt. 52, white, American; married; father healthy; mother died of phthisis pulmonalis at the age of 53. Fifteen years ago he first began to suffer from dyspeptic symptoms. These consisted principally of a sensation of epigastric oppression and vomiting; this latter generally coming on one or two hours after eating. These symptoms were much benefited by attention to diet, yet never entirely disappeared. His general health, however, suffered comparatively little, and he was able to attend to his business, which was that of a plumber. During this time he emaciated rapidly, and presented the appearance of confirmed ill health. In 1863, in the call for the militia, he entered the service as captain of an infantry company, and was on duty about seven weeks, during which time he was much exposed to cold and wet. The change of food also affected him most unfavourably; the vomiting, which hitherto had been only occasional, now became almost constant, and on two occasions was accompanied by the ejection of considerable quantities of fluid resembling coffee-grounds. He also suffered from severe diarrhœa, which ceased, however, soon after his return home. His health never recovered from this severe shock; the vomiting persisted obstinately, and was accompanied by severe epigastric pain, which was paroxysmal in character, appearing with great regularity every night about twelve o'clock, and after having prevented sleep, by its intensity, for about two hours, would gradually subside. He commenced to fail rapidly, losing flesh, strength, and spirits. At this time he submitted to various empirical plans of treatment, but gained nothing by it—taking numerous patent remedies, and being cupped, blistered, packed in wet cloths, &c. He could now take no solid food, but lived entirely on milk and light animal broths. His bowels acted regularly, and the other functions were performed normally.

When first seen, Feb. 28th, '67, he was very weak and exceedingly emaciated; mind clear, spirits good; considerable desire for food, but any indulgence was surely followed by pain and vomiting. No cough, no hectic irritation; surface always harsh and dry; pulse frequent, small, and feeble; tongue clean, surface presenting a perfectly raw and stripped appearance; mucous membranes pale, and the whole aspect almost irresistibly suggesting the presence of carcinomatous disease. Bowels regular; passages normal; urine free—clear, red colour—sp. gr. 1018, acid; no albumen, no deposit. The vomiting, preceded by severe epigastric pain, now followed even the lightest food. The matters ejected were intensely acid, and contained sarcinæ ventriculi, torulæ cerevisiæ, vibriones, and altered food. Abdomen scaphoid; a slight enlargement could be felt in the epigastrium, which had slight pulsation communicated to it from the aorta. On placing the ear over this spot a distinct, single rough murmur could be heard; this could not be detected at any other point. The epigastric region appeared slightly tumid; pulsation occasionally visible; there was no sensitiveness on moderate pressure.

The vomiting was allayed by subnitrate of bismuth; the severe pain by belladonna, conium, and hyoscyamus. Any attempt to more than merely palliate was followed by exacerbations in the symptoms. From the date when he was first seen to the date of death (May 20, '67), the downward progress of the case was slow, but continuous and apparent. He emaciated even more, became excessively weak, and for a few days prior to his death, which took place very quietly, he passed into a state of mild, wandering delirium, interrupted by periods of perfect lucidity.

Post-mortem.—Body well preserved; only the abdomen allowed to be examined; total absence of subcutaneous fat; liver large and healthy; kidneys healthy; spleen about normal size—rather soft and pale; intestines healthy. Stomach large; walls thickened, especially towards the pyloric extremity; it contained about f℥iij of gastric mucus and altered food. This was principally collected at the pyloric extremity, where it was contained in a large cavity formed by a perforating ulcer of the stomach, which had contracted adhesions posteriorly with the body of the pancreas and the lower edge of the left lobe of the liver. The ulcer was situated on the postero-superior border of the stomach; was about

2½ inches in its greatest diameter, which lay in the direction of the circumference of the stomach, and about 1½ inch in the opposite direction. It bordered directly upon the pyloric orifice, which, however, it did not contract (the orifice being perfectly patulous and healthy). The wall of the stomach forming its borders was much thickened and indurated, but not discoloured. The base, which presented a yellowish-white surface, was firm and dense, and had sprouting from its surface two large, irregularly rounded nodules. The depth of the cavity was about one inch, when the stomach was held so as to allow the ulcer to be the most dependent portion. The adhesion of the walls to the base was very slight, and the slightest violence readily separated them. The thickness of the walls of the stomach, both in the vicinity and forming the walls of the ulcer, seemed to be due, in great part, to an increase of the muscular and fibrous coat—under the microscope presenting great increase in the muscular fibre-cells, and white fibrous and yellow elastic tissues. The floor of the ulcer, under the microscope, appeared to be formed of almost pure fibrous tissue. After cutting through this, a thick layer of a yellowish nodular substance was reached, which consisted of pure fat and a few fatty cells. The nodules were surrounded by a delicate fibrous stroma, and apparently consisted of the degenerate pancreatic structure. There was no evidence of any old peritoneal inflammation; the normal connection of the different organs in the vicinity, however, seemed to be unusually firm and dense.

Embolism of the Spleen and Kidney, from Fatty Softening of the Mitral Valve, probably following Endocarditis.—Dr. W. W. KEEN said the specimens were presented to him by Dr. McArthur, from the Soldiers' Home, but no previous history could be obtained.

Heart.—The edges of the tricuspid valves were slightly thickened, as were also its chordæ tendineæ. The pulmonary valves were healthy; the walls of the right heart normal. On the left side there was some hypertrophy, but not very marked. The aorta was atheromatous in quite large patches; the aortic valves were all three markedly thickened, especially at the edges, and vegetations were beginning on one, giving to it the rough appearance of sand-paper. All the chordæ tendineæ of the mitral valve of both leaflets were immensely thickened and shortened. Both leaflets were thickened throughout, and covered within and without with vegetations, some as high as one-sixteenth of an inch. Both leaflets, but especially that next the septum ventriculorum, were eaten away by fatty degeneration, and one of the chordæ tendineæ was completely severed from the valve by the same process. By the microscope the fatty nature of the process was fully established, compound granular corpuscles, fat-cells and globules being almost the only elements seen.

The *spleen* was marked by one very large depressed spot, with puckered edges, and by several neighbouring smaller ones. There were, besides, a number of very dark patches, and the cicatrices already spoken of were surrounded by a dark margin. On section, all these discoloured regions were found to be irregularly pyramidal, the apices being directed centrally. The arteries were searched for, and partly traced; but there was great difficulty in tracing them on account of their depth. No embolia could be found so far as traced.

The *kidney* (which one is not positive) had also one large depressed and puckered yellow spot on the free border. It was 1½ by 1 inch. On section it was pyramidal, the apex being central. Near it were three small spots of the same character. On tracing the renal artery, one large branch was directed to the diseased portion, and bifurcated just at its apex. One of its branches ran into the diseased pyramid at about one-third way from its lower border, and was completely occluded and solidified by an embolus. The other branch skirted for a little distance the upper edge of the diseased spot, and then plunged a little way into its substance. Just as it plunged in, an embolus a quarter of an inch long was seen, which had evidently occluded the artery. Soon, however, by softening at the centre, its resistance was diminished, and the blood bored its way through the centre, changing the solid clot into a cylinder, and washing the softened central parts further on. Further on, in fact, one of the small clots was found, and just beyond it a small cyst, as large as a pin's head, whose contents looked like pus, but which the microscope showed to be made up of granular corpuscles and fatty débris, no pus corpuscles being present. Here, too, were seen the small cicatrices on the external surface, caused, doubtless, by the fragments washed through the cylindrical clot before described; but none of them were actually observed. Examined by the microscope, the renal tubes were found lined with epithelium in all stages of fatty degeneration. Scarcely any other change was noticed, save the presence of a large number of compound granular corpuscles and oil globules.

Sept. 12. *Rheumatism; Repeated Attacks of Malarial Disease; Cardiac Disease.*—Dr. WM. PEPPER, in presenting the specimens for Dr. JAMES MARKOE, gave the following history: R. K., æt. 38, admitted to the Pennsylvania Hospital April 8, 1867; Irish; gardener; has resided for several years in Long Island, working steadily at his business. His parents and near relatives, so far as known, are free from any constitutional disease. He had, at quite an early age, a severe attack of acute articular rheumatism, but apparently without any cardiac complication. He has since then had frequent attacks of rheumatism, principally muscular; but has always been able to work, and, indeed, considered himself to have been a most robust man. He has also suffered for the past ten or twelve years, every spring and fall, with malarial fever, without any secondary lesions of either the liver or spleen being developed. Last August, after convalescing from some acute gastro-intestinal disturbance, he first noticed dyspnœa upon exertion, and some little cough. By the latter part of the autumn he had œdema of the feet, some ascites, and suffered from dyspnœa almost constantly. In February, and the early part of March, 1867, he became better; but the alarming symptoms soon recurred, and on admission he had œdema of the feet, ascites, marked dyspnœa, and cough. The heart's action was very confused, rapid; and there was apparently a want of synchronous action of the various cavities. The heart-beats were more frequent than the radial pulse, which was also very irregular and intermittent. The impulse was extended and heaving; the area of cardiac dulness increased; a murmur existed, moderately harsh, presystolic, and heard most distinctly near the nipple, to the left of the sternum, about the third interspace.

The treatment consisted of various diuretics, saline laxatives, iron, digitalis, &c. He improved at first decidedly, but soon fell back into his former condition; and after a long and painful illness he died quietly at 6 P. M. on 10th September.

Post-mortem.—Body œdematous. *Thorax*—lungs œdematous; the *right lung* adherent; only a small amount of effusion in right pleural cavity. *Left lung* crepitant throughout, but congested posteriorly; the pleural sac contained about Ojss of clear serous effusion. *Heart* large, flabby, loaded with fatty deposit; muscular substance pale, soft, friable; under the microscope showing very faint striation and granular condition; aortic valves incompetent; mitral valves covered with soft, friable, pendent granulations: the cusps thickened and crippled; right side of the heart healthy; no fluid in the pericardium. *Liver* large, heavy; the upper surface of the organ presented a coriaceous appearance, and was putty-coloured; the thickened capsule easily separable; the tissue of the capsule consisted of fibre-cells, white and yellow fibrous tissue. Substance of the liver very dense; in a state of extreme nutmeg congestion; there was also a slight increase of fibrous tissue. The cells were, for the most part, natural in appearance; some, however, were somewhat granular and compressed. *Spleen* large and nodulated; its capsule opaque and thickened; yellowish in patches; the surface over patches depressed. On cutting into it, several large patches of homogeneous, yellowish tough substance were found; they were almost encapsuled, and presented no trace of central softening; there were also some smaller patches of the same character. On microscopic examination they were found to consist of merely the splenic elements undergoing atrophic fatty change. *Kidneys* quite large; slightly malformed; the cortical substance diminished, and tissue very dense and hard; whole organ presented a lurid, leaden hue. Capsule non-adherent; structure not unhealthy; the cells only slightly granular, the principal change consisting in a large deposit of reddish-brown pigment, and an excess of fibrous tissue. The other organs healthy.

Tubercular Disease of Lungs, Spleen, Bronchial and Mesenteric Glands.—Dr. Geo. Pepper, in presenting the specimens, said: M. H., female, æt. 20, coloured, single, dairy-maid, no family history; healthy until eighteen months ago. At that time her menses stopped quite suddenly after exposure to wet and hard work; since that time she has steadily emaciated; had slight cough, occasional hectic phenomena, night-sweats; no hæmoptysis, but sputa, occasionally tinged with blood. Three weeks ago she commenced to grow rapidly worse; her abdomen began to swell; she had œdema of the feet; her cough became more severe, and the expectoration more profuse; the hectic symptoms grew more continuous; there has been no vomiting; appetite gone; bowels regular. One year ago she noticed quite a large swelling over the right sterno-clavicular articulation; this suppurated, discharged, and has left a fistulous opening, which now discharges freely. When admitted to the Pennsylvania Hospital, August 29, 1867, she was greatly emaciated; surface dry and harsh; considerable heat of skin; pulse small and feeble. Complains of great dyspnœa and pain in the abdomen; feet and ankles œdematous; abdomen tense, much enlarged, marked fluctuation, only slightly sensitive to the touch. There is a group of enlarged, indurated lymphatic glands above the right clavicle, and one large, indurated cervical lymphatic. The lungs gave evidence of advanced tubercular disease. She was placed upon tonics, good diet, and moderate stimulus; on this she rallied for a day or two, but soon commenced to sink, and died on September 9, 1867.

Post-mortem.—Body emaciated; cadaveric rigidity only slightly marked; considerable ascitic fluid. *Head* and *spinal cord* not examined. The *sinus* noted as existing over the right sterno-clavicular articulation was found to communicate with the sternal end of the clavicle, which was necrosed. *Lungs* bound down by dense pleuritic adhesions; the lower lobe of the left lung very dense, small, and firmly adherent to the diaphragm; the pulmonary tissue was perfectly packed with yellow tubercle. *Bronchial glands* large, filled with yellow tubercle. *Heart* small; tissue pale and friable; firmly and universally adherent to the pericardium. *Liver*—substance soft, friable, very fatty; firmly adherent to the diaphragm; the capsule studded with gray tubercle. *Spleen* large, pyramidal, and irregularly nodulated; about ten inches long, and four inches in diameter at base; tissue very dense; of an intensely deep purplish, black colour; studded throughout its entire extent with irregular, whitish patches, some few of them softened in the centre. *Kidneys* healthy; intestines healthy. *Mesenteric glands* very large, and packed with yellowish, friable tubercle. The morbid material deposited in the various organs, when examined under the microscope, gave the characteristic appearance of yellow tubercle.

1867. *Sept.* 26. *Cancer of the Liver.*—Dr. WM. PEPPER, in presenting the specimen, gave the following history of the case from which it was derived:—

B. T., æt. 50, Irish, domestic, married and has seven children, four of whom are now living, was admitted to Blockley Hospital July 29, 1867. So far as could be learned, she belonged to a healthy family. She first noticed a tumour below the right ribs about eight months ago, since when it has grown steadily. On admission, the following symptoms were noted: Extreme emaciation; mammæ atrophied; skin pale, but without the slightest tinge of jaundice; œdema of left hand, and of both legs up to the knees. The chest walls were very thin and resonant throughout, and the respiratory murmur pure; cardiac sounds normal. There was a large nodulated mass extending across the entire upper portion of the abdomen, the lower border being easily traced from two inches above the crest of the right ilium, across to a point midway between umbilicus and pubis, then upwards to about an inch and a half above and an inch to the left of the umbilicus, and thence to the left hypochondriac region in a line about three inches below the margin of the left ribs. This mass, evidently the liver, presented the chief enlargement in its right lobe, the lower border of which was rounded and very hard, and, on passing the hand beneath it, several large hard nodules could be felt attached to the under surface. There was also a large rounded mass springing from upper surface of left lobe. Hepatic dulness, in the line of the nipple, began on the sixth rib, and extended downwards nine inches. Width of right lobe, measured over the most prominent part, eleven and a half inches. The most projecting nodulated part occupied a position above and to the right of the umbilicus, and measured eighteen inches around the base; the skin over this was tense and glistening, but neither adherent nor discoloured. The whole mass pulsated visibly, but there was no murmur audible over it; it was also exceedingly hard, inelastic, and but slightly sensitive. Veins of the abdominal walls, especially the right superficial epigastric, much enlarged; the latter tortuous, and apparently transmitted but little blood, and that in an upward direction. External mammary veins distended, their current strongly upwards, and apparently they formed an anastomosis with the epigastrics. No evidence of peritoneal effusion.

31*st.* The position of the liver appears to vary with degree of distension of the abdomen, since the lower edge of the right lobe is within half an inch of the crest of the ilium; indeed, the whole liver is somewhat rotated upwards and to the right, and can be moved by firm pressure. Urine discharged involuntarily; bowels quiet. Marked puffiness of the eyelids gradually appeared, with decided chemosis; pupils moderately contracted.

Oct. 2. Has been lying for several days in a drowsy state, from which it is very difficult to rouse her; position is constantly on the left side, half turned over on to the face. Œdema and chemosis much increased, most marked on the left side. Has had one thin and rather light-coloured stool. Pulse 108. Temperature in left axilla 100.8°. Towards evening, temperature 101°; the œdema of the dependent side of the neck had so increased as to interfere with deglutition and respiration, and death occurred the following morning at eight o'clock.

Post-mortem.—Body much emaciated; the surface pallid, without the least jaundiced tinge.

Brain healthy; no disease of vessels at the base, and no cause of pressure upon the ophthalmic veins.

Thorax.—Upper costal cartilages ossified; lungs anæmic and slightly œdematous in parts, otherwise entirely healthy. Each pleural cavity contained about f℥ij serum. *Heart* rather small; contained a considerable amount of soft dark clots; some thickening of the edges of the mitral valves, and at the seat of the corpus aurantii on one leaflet of the aortic valve a small calcareous nodule.

Abdomen.—A small amount of peritoneal effusion, with several shreddy masses of dark-reddish lymph, lying free in the cavity; the peritoneum itself smooth and apparently healthy. Spleen of normal size, rather pale and soft. Kidneys highly fatty; right smaller than left, and in one place presented a patch of firm yellowish tissue, somewhat depressed below surface. *Stomach* presented no disease of its walls; the mucous membrane injected, of a slate colour. Small intestine quite healthy; mucous membrane of the duodenum congested and ecchymosed in spots. Large intestine contained a considerable amount of partially-formed, well-coloured feces; its walls healthy, excepting that the transverse colon was closely adherent to, and partly blended with, the mass growing in the anterior border of the liver. The mucous membrane at this place was ecchymosed, and in several spots so softened as to break down under the slightest pressure. The omentum small, shrivelled, and contracted; all the fat removed. *Liver* weighed 7 lbs. 15 oz. Posterior section apparently free from disease. Anterior part has two large masses, the larger seated in the right lobe, and measuring 5⅝ inches in diameter. Antero-posterior diameter of this lobe measured 10 inches, the lateral 7 inches. The large rounded mass presents numerous whitish nodules, varying in size from that of a pea to that of a walnut, separated by narrow bands of dark liver-tissue and distended tortuous veins. The peritoneum over this part thickened and whitish. A section of this mass showed its structure to be quite dense and fibrous, especially in its central portion, while the periphery, to the extent of 1½ inch in width, was of a delicate rose-pink colour, interspersed with spots of deep purplish red. It did not bleed on section, and scarcely broke down on pressure, only here and there showing signs of breaking down; a small quantity only of cancer-juice could be expressed. Posterior portion of this lobe contained but one nodule, $\frac{1}{3}$ inch in diameter. Large nodule in anterior border of the left lobe measured 3 inches in diameter, embracing the whole space between the layers of peritoneum, being merely surrounded by a layer of liver-structure one line in thickness. This mass could readily be enucleated from its seat, being merely attached to the surrounding liver-structure by a capsule of connective tissue. On section, presented a central portion of almost pure white colour, very firm and dense, surrounded by a rim of tissue quite elastic, not easily breaking down under pressure, smooth on section, and of a grayish-white colour, variegated with spots of pinkish red. Peritoneum over this mass but slightly thickened, and had a few enlarged, congested veins. In the posterior part of this lobe was one small nodule, about one inch in diameter.

The true liver-structure appeared in a state of nutmeg congestion, and rather pale and flabby. These changes were not marked, and, when examined microscopically, the liver-cells were quite healthy, with merely a slight excess of fatty and granular contents. The impression given by the entire mass was that of enormous malignant growths arising in the anterior border of a comparatively healthy liver, not growing at the expense of the liver at all, but merely distending the structure over their increasing bulk. There were, in addition, several large cancerous masses in the fissure of the liver, one of them fully $1\frac{1}{2}$ inch in diameter, which seemed to be diseased glands. The common bile-duct was quite large, as was the hepatic duct also; but on tracing the cystic duct, the gall-bladder was collapsed, its walls greatly thickened, and closely adherent to an enlarged cancerous gland. The vena porta was perfectly healthy, and apparently had not been at all compressed.

Microscopic examination of the morbid growth showed the most typical appearances of encephaloid cancer.

The points of most interest illustrated by this case appeared to be the following:—

1. The entire absence of adhesions between the convexity of the liver and the diaphragm or abdominal wall, so that the position of the organ varied greatly with the varying distension of the abdomen, and could readily be altered by moderate pressure.

2. The strictly primary character of the disease of the liver, unless indeed it can be held to be consecutive to the cancerous growth in the glands in the fissure of the liver, no other organ of the body being affected.

3. The almost complete limitation of the cancerous growth to the anterior border, the remaining part of the liver being quite healthy, and able to perform its function, as shown by the entire absence of jaundice, and the well-coloured feces found in the colon after death.

4. Attention may be called to one or two peculiarities in the symptoms presented during life; to the extensive œdema of the extremities, combined with chemosis and œdema of the eyelids, without any ascertained local cause, and due probably to extreme anæmia; and, finally, to the temperature, as recorded both morning and evening. In a case of cancer of the liver reported to this Society by Dr. Da Costa, and published in the second volume of their proceedings, the temperature was unusually low, and allusion is made at the same place to several other cases of cancerous disease in which the same phenomenon of reduction of temperature had been observed. In the present case, however, the thermometric record—100.8° in morning, and 101° in evening—shows that we cannot

regard reduction of temperature as a diagnostic sign of cancerous disease, unless indeed we hold that the observation of the temperature for a single day only, and that day the last of life, does not furnish sufficiently reliable results to base any inferences whatever upon.

Oct. 10. *Cancerous Tumour of the Eyeball, occurring in a Child of Eighteen Months.*—Dr. John Ashhurst, Jr., said this case was under the care of Dr. C. J. MORTON, of Chester, Pa., who contributed the specimen, and furnished the following notes of the patient's history:—

Edgar S., born Jan. 1, 1864. When about eighteen months old, the pupil of the eye which was subsequently the seat of the tumour was observed to be widely dilated, being three or four times as large as that of the opposite side. Slight conjunctivitis followed, with marked intolerance of light. A convulsion, preceded by high fever, but leaving the child apparently as well as usual the day after, was the next phenomenon noted. Blindness of the affected eye soon followed, and from this time the progress of the case was from bad to worse. The eyeball was removed, at the earnest solicitation of the parents, and confessedly as a palliative mode of treatment merely, on March 31, 1867, by Dr. Thos. Geo. Morton, of Philadelphia. The disease returned, *in situ*, in about six weeks, and death, preceded by much suffering, ensued on June 30, 1867. The child's complexion, which was somewhat characteristic of the cancerous cachexia before the operation of March 31, became very markedly so after that time. The specimen shown to the Society was the secondary tumour, removed after death. Careful inquiry failed to detect any evidence of the disease being hereditary in the child's family.

Oct. 24. *Osteo-Enchondroma of the Venter of the Right Scapula.*—Dr. GEO. PEPPER gave the following history: This specimen was removed from the body of a coloured boy, aged 16 years, who died in the most extreme condition of emaciation from general tuberculosis. During life the right scapula was discovered to be rather more projecting than normal, but no particular symptoms were noticed in connection with it. The growth sprang from the under surface of the bone, close to the posterior border, and about midway between the upper and lower angles. The tumour had a flat mushroom-like appearance, with a broad sessile attachment and thick overhanging edges; it measured 1½ inches in its greatest and about 1 inch in its lesser diameters, and was elevated about one inch above the surface of the bone which seemed of perfectly healthy character.

The growth consisted, for the most part, of a very dense bone over the surface of which was superimposed a thin layer of a pinkish, translucent, cartilaginous-like substance. On section, the pedicle appeared to be osseous in structure, while the expanded body was partly osseous and partly calcareous, overlaid as before stated by a thin layer of cartilage. The osseous structure was cancellous in character and of a reddish hue, while the calcified portion was of a dull white colour and very dense and hard. The marrow cavities, which were abundant and large, contained a reddish gelatinous material. When the bony structure was examined under the microscope the bone corpuscles were found to be small, and crowded, and the canaliculi indistinct. The calcareous matter showed amorphous, highly-refracting particles (apparently mineral salts), with no true osseous tissue. The reddish gelatinous material consisted of granular fat, free oil globules, blood-corpuscles, and irregularly rounded and oval granular nucleated cells. The pinkish translucent substance presented all the characteristic appearances of cartilage structure, except that the loculi were crowded and the nuclei shrivelled and grotesquely irregular.

Dilatation of Heart; with Tricuspid Regurgitation, and Fenestrated Condition of Aortic Valves.—Dr. WM. PEPPER read the following history:—

Henry S., æt. 40, shoemaker, admitted to Philadelphia Hospital September 25, 1867. For the past twenty years has been very intemperate; but enjoyed good health until three months before admission, when he was attacked with severe cough and dyspnœa, following exposure. The cough disappeared in a few days, but the dyspnœa steadily increased, although he continued to work at his trade until two weeks before admission, when his legs became œdematous and dyspnœa was so extreme as to prevent him from lying down. He died within forty-eight hours after entering the ward. Physical examination showed the heart to be enlarged, and its action very feeble; there was also a systolic murmur to left of sternum, from fourth rib downwards, though not heard to left of apex beat. The lungs were intensely congested; and veins of neck distended and probably pulsating. There was marked lividity of face and neck.

Post-mortem.—*Liver* very large and heavy, and presenting the typical nutmegged appearances. *Spleen* somewhat enlarged, heavy, and dense: trabeculæ unusually evident. *Kidneys* much congested, the cortical substance dotted with livid red spots: the cones in places were marked with livid streaks, in others with congested points. *Lungs* tightly adherent; deeply congested, but still floating in water. A dense puckered cicatrix at the right apex. Bronchial tubes unnaturally rigid and uniformly dilated. *Heart:* No pericardial adhesions; but little pericardial effusion. Two large white spots on the anterior face of the right ventricle; its cavity filled with chicken-fat clots, while the right auricle was distended with dark blackish clots. Right cavities of the heart enormously dilated; walls of right ventricle of almost normal thickness, and very hard and tough; walls of right auricle were, however, much thinned. Tricuspid valves thickened and presented several irregular fibroid nodules upon their surface: hydrostatic test showed them to allow marked regurgitation. The pulmonary artery dilated, rather exceeding the aorta in size: its walls were, however, healthy, and its valves competent and healthy. Left cavities of the heart contained less blood than the right, and the clots here were more dark and soft. The auricle and ventricle also less dilated, and the muscular structure of the ventricle less changed—being quite red and healthy looking. The mitral valves were slightly thickened, and were hydrostatically competent. The aortic valves very thin towards their insertion, the upper borders were markedly fenestrated, but were also competent.

Typhoid Fever; Death on Eleventh Day; Enlargement of Peyer's Patches without Ulceration; Vesicular Distension of Follicles throughout Intestines.—Dr. WM. PEPPER gave the following history:—

John B., æt. 17, German, admitted to Philadelphia Hospital August 6, 1867. Had been living for two years in Baltimore, and had suffered for nearly ten months with intermittent fever; legs and scrotum became œdematous six months before admission. Entered Baltimore Hospital in April, and remained under treatment there three months, being much relieved. In early part of April, suffered for several days, with almost complete suppression of urine. When seen in August, legs still œdematous, and surface of the body sallow. Bowels quite loose; urine albuminous. He was ordered sulphate of cinchonia in antiperiodic doses, and Basham's mixture; the œdema almost disappeared, and he gained strength rapidly. This improvement continued until September 18, when diarrhœa and vomiting set in, with marked fever; his pulse ranged from 96 to 106; the expression of his face was dull and stupid, though he could be roused, and answered intelligently; the skin was hot, and there was marked hyperæsthesia of surface, but no eruption; the tongue dry and covered with sordes. On the 27th the right parotid gland became inflamed. He remained in this state until the 28th, when he began to sink, and died early in the morning of the 29th, at the beginning of the eleventh day of the disease.

Post-mortem.—Brain and spinal cord not examined. Heart small and flabby; its valves quite healthy. *Spleen* enormously enlarged and almost circular in outline, being 8 inches long and 7 wide; its tissue dark and very soft; capsule thickened and puckered in one place, and adherent to a fold of the intestine. *Liver* enlarged, of a pale slate colour, soft and pasty. *Kidneys* congested, and presented slight granular change. *Intestines* distended with flatus and fluid feces. The large intestine presented throughout its extent staining of the mucous membrane by its contents; and marked stellate injection, especially in the upper part. Follicles of the mucous membrane much enlarged and distended, so as to form little pearl-like prominences, acuminate, containing a drop of turbid thick serum, and when ruptured leaving little oval ulcers. This condition was most marked in ascending colon, where the mucous membrane was closely studded with these follicles, so that they imparted a mammellated feeling to the hand when passed over it. This enlargement extended up to the vermiform appendix, though not so marked in the head of the cæcum as below. The solitary glands throughout the small intestine were enlarged in the same way; the lesion being most marked in the ileum, diminishing in the jejunum, and again presenting itself in the duodenum. Peyer's glands were all enlarged, especially towards the ileo-cæcal valve, but none of them had as yet ulcerated; their surface was rough and irregular, presenting numerous curved and branching ridges. Mesenteric glands also enlarged.

Nov. 14. *Encephaloid Cancer at the Bend of the Arm.*—Dr. S. W. GROSS exhibited a well-marked specimen of the hæmatoid variety of encephaloid cancer at the bend of the arm, and read the following history of the case:—

Philip Messimer, a blacksmith, æt. 42 years, early in May, 1867, while shoeing the hind foot of a fractious mule, was injured by the animal suddenly jerking the leg away, thereby powerfully wrenching his right elbow. There was no external injury; but two weeks later, on waking in the morning, he found his elbow and forearm much swollen and painful, conditions which did not exist on the previous evening. These inflammatory symptoms were reduced by topical and general medication, and in one week he was enabled to resume his work. A tumour of small size, however, remained, and this gradually increased, until the 1st of September, when he was obliged to desist from work, on account of the size of the tumour, and the painful and swollen condition of the forearm. Two weeks later, a physician made a small opening into the swelling at its inner side; but nothing more than clotted blood is described to have come away.

On the 2d of November, Messimer came under the care of Professor S. D. Gross, at the Clinic of the Jefferson Medical College. He had lost flesh; his countenance was somewhat pallid and flabby; but, in other respects, his general condition was good, and there had never been any cancerous disease in his family. The tumour was most marked along the inner aspect of the limb, and extended from five inches above to three inches below the elbow, but the motion of the joint was good, and only embarrassed by the presence of the morbid growth. The swelling was greatest at a point corresponding to the internal condyle, where it measured sixteen inches and a half in circumference, that at the corresponding point of the sound arm being eleven inches. The integuments over the growth were actively inflamed, and preternaturally hot, symptoms simulating an acute abscess; and there was also some pulsation, which was, however, referable to the displaced brachial artery. By an incautious observer, the tumour might, therefore, have been mistaken for an inflamed aneurismal sac. There was, however, no doubt as to the nature of the tumour, as it was characterized by bulk, rapidity of growth, a soft, semi-elastic consistence, a lobular feel, a deceptive sense of fluctuation, a dull, heavy pain, and enlargement of the subcutaneous veins. The forearm was somewhat œdematous, and the fingers were moist and cold.

The patient having been put under the influence of chloroform, an incision was made into the growth, with the effect of giving issue to characteristic encephaloid matter, and clotted blood. The diagnosis, having thus been verified, the limb was removed at the shoulder-joint, and at this date the man is nearly well, the wound having united almost throughout its entire extent.

An examination of the dissected limb discloses an ovoidal, and more or less lobulated tumour, the lower part of which is seated in the triangular space between the supinator radii longus and the pronator radii teres muscles, from which it is easily separable. Above, it extends along the inner side of the arm, and becomes lost in the triceps muscle, with which it is intimately connected. The pronator teres muscle is firmly stretched and displaced by the growth, and its anterior fibres have undergone fatty degeneration. The tendinous portion of the brachialis anticus muscle is secondarily involved, a section of it disclosing the hæmatoid variety of encephaloid. The cyst of the tumour is very distinct, being of a rosaceous hue, and having considerable firmness and thickness. Below, the tumour is well defined, and isolated from the original structures in front of the joint, from which it can easily be separated by the fingers carried around it. Above, the limits of the cyst are not so well marked, involving as it does the inner border of the triceps muscle, which is secondarily affected for five inches above the joint. The median nerve is stretched over the inner side of the growth, and the brachial artery is displaced outwards. Pressure upon the tumour is followed by the escape of pinkish cerebriform material, and clots of blood. Several lymphatic glands along the course of the brachial vessels and nerves were secondarily involved.

In connection with the above specimen, Dr. Gross exhibited a coloured drawing of a similar tumour, occupying the upper limits of the forearm, the cyst of which was well defined. The patient was a gentleman, from Ohio, thirty-five years of age, who underwent amputation of the arm, at its middle, in August, 1865. For upwards of six years, his health remained good, when he died, as was supposed by Professor Lawson, of the Medical College in Ohio, of secondary medullary carcinoma of the lung. A post-mortem examination could not be obtained.

In August, 1867, Professor Gross also amputated at the shoulder-joint, for an encephaloid tumour involving the triceps muscle, from the olecranon process, to half-way up the arm. The patient was a gentleman, 65 years of age, from the interior of the State. The tendon and the fleshy parts of the muscle were infiltrated with the disease, which probably began in the interfibrillar tissues, from which it gradually encroached on the fleshy fibres, which it displaced, altered, and finally destroyed. In none of these three cases were the bones involved.

Ovariotomy.—Dr. W. W. Keen read for Dr. W. L. ATLEE the following report of a successful case of ovariotomy:—

July 19, 1861. Miss M. G., of West Chester, Pa , aged 16, called upon me with a letter from Dr. W. D. Hartman. She has not menstruated since May, 1860, and dates the commencement of her disease at that time. She was tapped two weeks ago, and is now much larger than a woman at full period. All the characteristics of ovarian dropsy exist. There is a pretty uniform distension of the abdomen, which is occupied by one large cyst, containing a more solid mass in its anterior wall. Fluctuation is distinct. The solid portion of the tumour occupies a central position, extending from a point two inches above the umbilicus, nearly down to the pubes. Upon pressing this portion towards the spine, it carries the walls of the abdomen with it, indicating the existence of parietal adhesions. There is also a feeling of crepitus, resembling the crackling of new leather, over the whole anterior part of the tumour, upon manipulating the abdomen.

On examining per vaginam, the hymen is found to be absent; the uterus is pushed back, the cervix scarcely perceptible, and the os too small to admit the sound. Anterior to the uterus an elastic mass occupies the superior strait and dips down into the pelvis. This is evidently a portion of the abdominal cyst. The cicatrices of the tappings are plainly visible on both sides, beyond the lineæ semilunares. She says that she has heretofore suffered severe pains in the region of the adhesions.

History.—Dr. W. D. Hartman, of West Chester, her physician, sent me the following history of the case after operation :—

"Some time in May, 1860, I was consulted by Mary G., aged 15 years, for an enlargement of the abdomen, which gave her no pain, but she was much troubled with sick stomach and headache. Menstruation had ceased several weeks before, and she attributed its cessation and her subsequent illness to having scrubbed house in her bare feet. She had not menstruated more than five or six times in her life. The periods were regular, but the amount secreted was always scanty, and of a pale colour. Colour florid; possessed of considerable *embonpoint.* Been convinced of the existence of abdominal dropsy; with a view to relieve it various diuretics, cathartics, and alteratives, singly and combined, were successively resorted to. Although the kidneys always responded freely to their action, the accumulation of fluid steadily progressed. This state continuing until December 22d, I was forced to resort to tapping to obtain temporary relief. Owing to a large tumour which had been observed for a long time occupying the region below the umbilicus, a point midway between the anterior-superior spinous process of the ilium and the umbilicus on the left side was chosen at which to make the puncture, and twenty pints of a thick chocolate-coloured fluid were evacuated. The vomiting, constipation, and suffering from pain and distension of the abdomen were immediately relieved, and she was about in a few days. Being now satisfied of the character of the disease, with a view to a last effort, compression of the abdomen, and painting it with the tincture of iodine, and the use of the liq. ferri iod. were tried for a time without any sensible effect. February 8, 1861, I was again compelled to resort to tapping, which was performed on the left side, and about twenty-three pints of fluid were evacuated, of the colour and consistence of thick flaxseed tea. For some time previous to this operation she had been losing flesh. Medicine had long since been abandoned, and I now looked to occasional puncturing of the cyst as the only temporary relief from the rapidly accumulating fluid.

"On the 7th of April she was again tapped on the left side, when twenty-six pints of fluid were again evacuated, similar in appearance to the last. The tumour had increased to a considerable extent since the last tapping, and gave some trouble.

"She was again tapped May 18 and July 2, on the right side of the abdomen, the size of the tumour interfering with the usual point of puncture at each of these tappings. The fluid measured twenty-nine and a half pints, and had the usual appearance. Previous to the tapping on the 18th of May, her hands, feet, and face were quite œdematous for the first time, but after she was punctured this soon disappeared, and never returned. The patient now began to lose flesh rapidly, and seemed as one doomed to sink from her malady before many months. Although the operation for the relief of her disease, with its attendant risks, had often been mentioned to her, she had always refused to consent to encounter them. After the last tapping, however, at my urgent solicitation she consented to consult Dr. W. L. Atlee, of Philadelphia, with a view to ascertain his opinion of the propriety of an operation, and the following is his reply to my note, containing a brief history of the case:—

"'*Philad.*, *July* 19, 1861. My Dear Doctor: I examined your patient, Miss G., to-day. You are correct in the opinion that this is a case of ovarian tumour. Of course, nothing but extirpation of the cyst will cure her; and if she is willing to encounter the risk of an operation, she is entitled to the chances of it. There are, however, adhesions between the walls of the cyst and the parietes of the abdomen. In anticipation of an operation I would immediately place her on the use of the tinct. ferri chlor. I would advise the extirpation of the mass before again tapping her. Should you prefer not to operate, I will visit West Chester out of charity to the poor girl, and do it with pleasure.'

"Believing that her case was a more favourable one for the operation than usually presented, I encouraged her to submit to it, especially since she could obtain the experienced hand of Dr. Atlee for its performance. After consulting her friends, she assented, and Friday, August 2, was fixed by Dr. Atlee and myself for its performance.

"So rapid, however, had been the accumulation of fluid, that by July 26 I was forced to puncture the cyst for the sixth time, when about twenty pints of fluid were evacuated with difficulty, one-third of the fluid probably remaining. In a day or two she had regained her usual appetite and spirits. It is proper here to remark, that after the fluid had accumulated to a certain extent she would have severe abdominal pains, followed by sickness and vomiting of bilious matters. The pulse was feeble and frequent (135 to 140), with coldness and blueness of the lips and extremities. Upon puncturing the cyst, and evacuating its contents, these symptoms would subside at once."

Operation.—August 2, 1861, at 4 P. M. I met the following gentlemen at the house of the patient in West Chester: Drs. W. D Hartman, Isaac Thomas, John R. Hoskins, Joshua R. Hayes, Jacob Price, John R. Everhart, Charles L. Seal, W. S. Malany, Samuel H. Harry, John B. Brinton, Daniel G. Brinton, and Messrs. W. B. Brinton, Arthur Ebbs, and W. Lemuel Atlee, medical students. The anæsthetic (two parts sulphuric ether, one part chloroform, liquid measure) having been administered, I made an incision five or six inches long in the linea alba below the umbilicus, penetrating through a thick wall of adipose tissue down into the peritoneal cavity. This exposed the more solid portion of the tumour. Passing my finger between it and the walls of the abdomen, I separated the adhesions in front. The solid mass was now pushed towards the left side as far as possible, to enable me to reach the cyst behind it with the trocar. This I perforated with a long, thick trocar, giving exit to several quarts of thick, tenacious, gelatinous, starch-like fluid, and filled with heavy flakes of more solid matter. All the contents of the cyst could not be brought through the canula, and the canula itself was finally forced away. This was owing to the cyst being adherent deeply in the right side, and the solid tumour blocking up the incision in front of it, so that it was impossible to rotate the opening in the cyst opposite to the opening in the walls of the abdomen, even with the aid of the vulsellum. This was unfortunate, as it was found afterwards that in detaching the deep-seated adhesions, the remaining contents of the cyst, consisting of the above kind of fluid, flakes and purulent matter escaped into the cavity of the abdomen, and flooded the viscera. The adhesions were separated with difficulty, and were both omental and parietal. After separating them, the whole tumour was gradually drawn out of the abdomen, and was found to be attached to the left side of the uterus by a very wide, thick, vascular pedicle, with the Fallopian tube bordering its extreme left. After crowding the pedicle together the clamp was applied and the tumour secured, leaving a portion of the cyst wall behind as a button to the clamp. The abdominal cavity was now seen, filled with the contents of the cyst, and it required a long time to cleanse it out, particularly the deep cavity of the pelvis, in which also were several clots of blood. This was carefully accomplished with soft sponges. After inspecting the torn vessels at the several points of adhesion, and finding none requiring the ligature, the wound was closed with five interrupted sutures, and dressed as usual.

The viscera generally looked pretty healthy; the intestinal capillaries, however, were engorged. The uterus was small, but healthy; and the other ovary sound. The anæsthetic agent acted admirably; there was not the slightest disturbance of the stomach or diaphragm, and the intestines were perfectly quiet. The patient's lips continued rosy all the time. The pulse did not flag, and was really fuller after than before the operation.

The fluid, when boiled, turned white and thickened, without having its fluidity destroyed. It was covered with a thick scum, and had small white coagula through it.

The tumour consisted of the left ovary. There was one large primary cyst, with a polycystic mass in its anterior wall, weighing altogether 32 pounds—cyst 2½, and fluid 29½ pounds.

August 3, 1 P. M. Dr. Hartman writes:—

"I have just seen our patient; she had some pain in her left groin and back last evening, but rested well after one or two doses of the anodyne. She is cheerful and *hopeful*. Her pulse 100, full and soft; and for the time, I think, she is doing finely."

4*th*, 1 P. M. "Pulse 96, and soft; tongue cleaning at tip and edges; had some pain in bowels last night, which appeared like wind passing through them; secretion from the kidneys is more abundant, and quite clear; pain in the left groin and front of thigh less severe than yesterday."

5th, 2 P. M. "Pulse 100, and soft; skin moist; less thirst; distension of abdomen entirely subsided; no pain; complains of feeling hungry."

6th, 3 P. M. "Pain in the bowels like flatus; swelling and tension in the right iliac region—otherwise the abdomen is soft, free from tension, and not tympanitic; pulse 112, and weak; skin moist; considerable thirst; tongue clearing; urine abundant, but more highly coloured."

7th, 3 P. M. "Pulse 96, and soft; skin pleasant; no thirst; no pain in the abdomen; tongue almost clean; feels hungry."

8th, 3 P. M. "Some soreness, tension, and swelling in left iliac region, but no pain; pulse 96, and soft; skin moist; tongue clean and moist; has had but little thirst for the last two days; says she feels quite smart."

9th, 7½ A. M. "Rested well last night; no pain or uneasiness from flatus since last evening; pulse 88; skin cool; urine abundant and clear; abdomen soft; no tenderness over the abdomen, except in the left iliac region; wound looks well."

10th, 9 A. M. "Rested well last night; pulse 88, and more full; tenderness in the left iliac region almost gone."

11th, 7 P. M. "An enema produced a dark liquid motion; pulse 76, full and soft; feels better to-day than usual."

17th. "Since my last report M. G. has progressed finely. Since the enema was administered her bowels have been moved regularly every day, and she has rested well at night. The wound has almost entirely closed, and there is no pain, soreness, or swelling about the wound. She was allowed to sit up on Monday last for the first time, since which she has been up for the greater part of the day. Her usual ruddy complexion is again reappearing; her general condition seems to be improving."

26th. "M. G. is doing finely; her appetite is good, and she is regaining flesh quite fast."

Aug. 31. Dr. Hartman called to-day to say that Mary had entirely recovered. He says that in May, 1860, she weighed 150 pounds. Now, she weighs 92 pounds, having walked out and weighed herself.

Sept. 12. Mary came to Philadelphia, and called to see me to-day. She is perfectly well. She now weighs 103 pounds. She was at a picnic last week, seven miles from home.

About a year after the operation she came to this city in company with a man with whom she lived as his mistress. She became pregnant by him, and was delivered of a still-born child at nearly full term. Premature labour was produced by his abuse, otherwise she thought she would have carried the child to full term. Soon after this she became a public prostitute, and frequented the lowest dens of the city. Her first admission to the Philadelphia Hospital (Almshouse) was some eighteen months since, in the venereal wards, and she has been three times since an inmate of the medical wards, her last admission being on Sept. 24, 1867. She was then suffering with an attack of typhus fever and the results of debauch and exposure. She died Oct. 9, 1867.

Since the operation menstruation has frequently occurred, but at irregular intervals and in smaller quantity than usual.

During her illness, an examination of the abdomen by Dr. J. Ewing Mears, led to the discovery of the cicatrix, and he kindly called attention to this more than usually interesting case. The facts as to menstruation and the nearly completed pregnancy were obtained from two of her intimate friends in the ward, to whom she had confided these facts, together with the nature and time of the operation and the name of the operator.

Autopsy, Oct. 11, by Dr. W. W. Keen.—When examined externally no discoloration was seen save at the cicatrix, which was quite dark. The adipose tissue of the belly was one inch in thickness, save where the belly walls became exceedingly thin at the cicatrix, the two recti muscles being separated about two and a half inches. On opening the abdomen, no trace of peritonitis of any age was to be seen—not a single adhesion existed at any point. The pedicle was adherent to the cicatrix, and on each side of it the peritoneum was continued to the brim of the pelvis. By means of these two broad attachments, a large number of vessels found their way to the uterus, and the remaining right ovary. The right ovary, Fallopian tube, &c., were healthy, save that a cyst of the size of a pea existed at one point. The ovary also showed a very marked and recent corpus luteum, probably but a very few days old. The uterus was very much tilted upwards to the left side by the traction of the pedicle. Its neck was greatly elongated. The os uteri was not fissured, and the rugæ on the vagina were still distinct. The specimen is in the Museum of the College of Physicians.

Nov. 28. *Secondary Medullary Carcinoma of the Liver.*—Dr. S. W. GROSS, in presenting this specimen, gave the following account of the case:—

In October, 1866, Dr. S. D. Gross removed from the left labium of a German lady, 46 years of age, a tumour of an apparently fibrous nature, and of the size of a Sicily orange. It was free from pain and discoloration, of a firm, slightly elastic consistence, and of a somewhat pyriform shape, having a small base, which extended to a considerable depth. On section, it displayed a dense, firm tissue; but it was not subjected to microscopical examination, nor was it suspected to be of a malignant nature, although the subsequent history of the case renders it highly probable that it was incipient primary encephaloid of the labium.

After the lapse of four months the lymphatic glands of both groins began to enlarge and become painful, and six weeks subsequently she suffered from pain in the epigastrium. A swelling soon afterwards appeared in this region, and in the middle of June, when she went to the country for the benefit of her general health, it had become quite prominent.

I first saw the patient in the latter part of August, when the glands of both groins had attained the size of a small fist. They were extremely painful; the integuments were discoloured, and the cutaneous vessels were much enlarged. The tumour in the epigastrium and left hypochondrium was very prominent, pushing forwards the ensiform cartilage until it was bent upon itself to nearly a right angle, and rendering the integuments of these regions very tense. The lower border of the mass could be traced at about two inches above the umbilicus, but the extent of the encroachment upon the left hypochondrium could not be determined, as manipulation was productive of great suffering. There was no jaundice; the urine was normal; the bowels regular, and the stools of proper consistence and colour, thus showing that the functions of the liver were not interfered with. The colour of the skin was natural; the woman was pale and emaciated; but the peculiar cancerous cachexia was absent. She never suffered from nausea or vomiting, and her only complaints were increasing debility and pain. The case progressed in this way until the 16th of November, 1867, or thirteen months from the date of excision of the tumour of the labium, when death ensued apparently from sheer exhaustion.

Autopsy, thirty-eight hours after death.—Rigor mortis but slightly marked; body greatly emaciated.

The *liver* was enormously enlarged, and extended deeply into the left hypochondriac region, and downwards five inches below the ensiform cartilage; its entire weight was fourteen pounds. The cancerous deposits were confined almost exclusively to the left lobe. The forms of encephaloid seen in the liver were the tuberoid and infiltration of the hepatic parenchyma. Two isolated masses occupied the right lobe, both of spherical form, and of the size of large walnuts. One was seated superficially on the upper surface of the lobe, and presented at its centre an indentation, in which the peritoneal covering was opaque and thickened. The other tumour was seated about two inches below the surface. The whole of left lobe was one mass of disease. Very numerous nodules were scattered throughout its entire extent in the periphery, and deeply seated Some of these were very adherent to the adjoining hepatic structure, while others were more easily detached, and invested by a delicate capsule. The greater part of the parenchyma of this lobe, however, was infiltrated with the disease, and the extra-cancerous tissue had undergone fatty transformation. On incising this lobe, about twenty-four ounces of a dark-brown fluid were discharged, leaving an irregular cavity, which was circumscribed by a membrane of new formation. The peritoneal covering bore marks of inflammation, and the liver was firmly adherent at several points to the diaphragm, as well as to the pyloric extremity of the stomach. The gall-bladder was half filled with bile. Pancreas indurated, apparently from chronic inflammation; the spleen was very small; but the other abdominal viscera were normal. The peritoneal cavity contained nearly a gallon of bloody serum.

The superficial and deeply-seated *lymphatic glands* of both groins were enlarged to the size of a fist, and the integuments covering them on the point of ulceration. The tumour of the left side, in particular, was breaking down, and its interior contained some bloody fluid. The femoral rings were completely occluded by enlarged glands, and the iliac and lumbar glands were very extensively involved, their size varying from that of a pea to that of a pigeon's egg.

The anterior mediastinal glands were also very greatly enlarged, and there was double hydrothorax. The sac of the pericardium contained an ounce of limpid serum; the walls of the heart were fatty, but the lungs presented no abnormal appearances.

Dr. William Pepper, who was kind enough to take charge of the specimens a few hours after their removal, subjected them to *microscopical examination*, with the following results:—

> "Examination of the encephaloid deposits in the lymphatic glands, either in the groin or the abdominal cavity, showed very numerous round, clear cells, larger than normal lymphatic gland-cells, with scanty granular contents, and one, or, in a few cases, two round, nucleolated nuclei. The firm solanoid nodule in the right lobe of the liver presented no true fibrous stroma, but contained numerous large connective tissue corpuscles, and many cells of irregular shape and size, with single, large, clear oval nuclei. The huge mass in the left lobe was evidently in an advanced stage of degeneration. The shreddy yellowish lining of the central cavity contained only granular fatty matter, with numerous round, granular corpuscles, resembling pus-cells. Throughout the inner portion of the walls, also, the cells were much shrivelled, and mixed with a great deal of hæmatin and free fatty matter, and many compound granule-cells. In the outer, grayish-pink parts, few evidences of disintegration were present, and many large multinucleated cells were observed."

It is interesting in this case to note the mode of propagation of the disease. Commencing as a tumour of the left labium, the cancer-germs were transmitted by the lymphatics to the inguinal glands, and thence along the iliac and lumbar glands to the liver. From the upper surface of the left lobe of the liver, which was the principal seat of the deposit, the lymphatics which pierce the diaphragm near the left lateral ligament carried the encephaloid germs to the glands of the anterior mediastinum, where the progress of the affection was arrested.

Dec. 26. *Head of the Thigh-Bone removed by Excision on account of Gunshot Injury.*—Dr. S. W. GROSS exhibited a specimen of gunshot wound of the head and neck of the left os femoris, which had been removed by operation by Dr. F. H. Gross, of Philadelphia, formerly Surgeon U. S. Volunteers, and Medical Director of the 14th Army Corps. By some strange oversight this operation has not been included among those reported by Assistant-Surgeon Otis, U. S. A., in *Circular No.* 6, S. G. O. Making, as it does, the forty-second authenticated example of this operation, as performed by American surgeons during the late war, Dr. Gross thought that a brief abstract of the history of the case, as furnished by the operator, would prove of interest.

Private Michael Welsh, Co. H., 10th Regt. Ky. Vols., aged 40 years, was struck by a conoidal ball in the region of the left great trochanter, at the battle of Chickamauga, September 20, 1863, and at once conveyed to a field hospital, which soon after fell into the hands of the enemy. Ten days subsequently, he was brought to Chattanooga, Tenn.; and during the period of his captivity the only nourishment that he received was a small portion of corn-meal gruel daily. Having lost his blankets, he also suffered much from cold, and had contracted a rather severe bronchial inflammation. On the 1st of October, he was admitted into the general field hospital of the 14th Army Corps, when a conoidal musket ball was removed from among a mass of small fragments of the neck of the femur, the ball having entered just anterior to the great trochanter. Two days subsequently, Surgeon F. H. Gross carried a curvilinear incision, with its convexity presenting forwards and including the opening made by the ball, from above downwards, and excised the head of the femur along with the attached greater portion of the lower surface of the neck of the bone. Many fragments were removed with the forceps; but as the trochanters were not involved in the injury, the remaining sharp portions of the neck were trimmed off close to the inter-trochanteric lines, which completed the procedure. No ligatures were required; the man bore the operation well; and the limb was placed in a comfortable position.

From the date of the operation up to 20th of October, the man did very well, in spite of his enfeebled condition and bronchial trouble, when the discharge from the wound became sanious. On the same night he had a chill, and was delirious, and the pulse was very feeble and frequent. On the 25th inst., his condition is thus described: "Pulse 125 and very feeble; tongue dry and red; had a natural alvine evacuation. At 9 A. M., hemorrhage recurred from the wound, which was arrested by injecting a solution of subsulphate of iron. Stimulants freely administered, but the man grew more and more feeble, and expired at 2 P. M."

No post-mortem examination was held, but death was evidently due to pyæmia. The specimen shows that about one-fifth of the head, at its upper aspect, has been shot away, together with the entire upper surface of the neck, about one-half of the anterior and posterior surfaces and the lower border of the neck remaining.

In commenting upon this case, Dr. S. W. Gross made the following remarks upon the operation of excision of the head of the thigh-bone in army practice:—

"In a review entitled 'Military Surgery,' which I contributed to the *American Journal of the Medical Sciences* for Oct. 1867, I gave the statistics of 43 excisions of the hip-joint for gunshot injury. Since the appearance of that paper, I have collected 15 additional examples of this operation, thus bringing up the number to 58, which comprises all the authenticated and finished cases that have been reported up to the present date. 42 operations were practised by American surgeons; 9 by German surgeons; 6 by English surgeons; and 1 by a French surgeon.

"Of these 58 cases, 7 recovered, and 51 died, thus affording a mortality of 87.93 per cent. As far as can be ascertained, 13 operations were primary, with 12 deaths, and 30 were secondary, with 26 deaths; and in 15 the precise date of operation is uncertain, but of these 13 were fatal. The results of the procedure in army surgery may, therefore, be thus expressed:—

	Per cent.
Mortality of all excisions of the head of the femur . .	87.93
" primary " " " " " . . .	92.30
" secondary " " " " " . .	86.66

"Death followed in 21 from exhaustion, in 6 from pyæmia, in 3 from secondary hemorrhage, in 1 from the shock of the operation, in 1 from hectic, in 1 from internal hemorrhage, in 1 from gangrene, in 1 from acute peritonitis, in 1 from colliquative diarrhœa, in 1 from cholera, and in 14 from an unknown cause.

"Although the discussion of therapeutics and operations may be somewhat out of place in this Society, I am yet impelled to bring before it certain statistics of amputations at the hip-joint which may be of service in estimating the comparative advantages of excision and disarticulation for gunshot injuries of the head and neck of the thigh-bone. In the paper already alluded to I tabulated 137 hip-joint amputations, and have since collected 29 additional cases, thereby increasing the number to 166. Of these, 53, with 9 recoveries, were performed by American surgeons during our late war.

"Of these 166 operations, 24 recovered, and 142 died, thus affording a percentage of mortality of 85.54. 68 were primary, with 3 recoveries; 71 were secondary, with 17 recoveries; and in the remaining 27 cases the time of operation could not be ascertained, but of these 4 were cures. The results of the operation in army surgery may, therefore, be expressed as follows:—

	Per cent.
Mortality of all amputations at the hip-joint . . .	85.54
" primary " " " . . .	95.58
" secondary " " " . . .	76.05

"A comparison of these statements shows that excision of the hip-joint is attended with greater risk to life than disarticulation at the joint. Primary excision is 3 per cent. less fatal than primary amputation; but secondary excision is 10 per cent. more unfavourable than secondary disarticulation. Regarding, then, the operative treatment of gunshot fractures of the head and neck of the thigh-bone, from a statistical point of view, the chance of saving the patient is manifestly on the side of secondary amputation, the mortality of the procedure being 16.25 per cent. less than that of primary excision; 10.61 per cent. less than that of secondary excision, and 19.53 per cent. less than that of primary amputation."

1867. *Dec.* 12. *Penetrating Wound of the Kidney, followed by Profuse Hemorrhage into Bladder; Death from Pleurisy.*—Dr. WM. PEPPER related the following case:—

Robert S., æt. 26, admitted to the Pennsylvania Hospital April 7, 1867. Had been stabbed in the back with a sharp-pointed, narrow-bladed knife, which had entered in the upper part of the left lumbar region, and penetrated to a considerable distance forwards and downwards. The first urine which he passed after the reception of the injury was very bloody; and this condition continued for some days, the blood-corpuscles being at first merely changed by maceration in urine, but soon becoming mixed with a number of blood-casts from the renal tubules. The amount of blood in the urine steadily diminished, the blood-casts being replaced by epithelial and granular casts. The urine, however, remained highly albuminous. About the tenth day after injury, symptoms of pleurisy of the left side set in, and considerable effusion took place. The constitutional symptoms became more and more grave, and death occurred twenty-three days after the reception of the injury.

Post-mortem examination.—In the left pleural cavity there was a large amount of purulent liquid, containing flocculi of yellowish lymph. The pleura much thickened, and several firm adhesions between under surface of lower lobe and the diaphragm. There was no evidence that the knife had entered the pleural sac. Right kidney quite healthy; left kidney abnormally adherent in its position, and, upon being removed, the capsule and surrounding connective tissue were found very much thickened and dense. This was due to the effusion of a large quantity of blood into the cellular tissue around the kidney, which had subsequently become firmly coagulated. On making a section through this capsule, several points were found where the clot had undergone softening, and formed small cavities containing a puriform fluid. After stripping the capsule from the kidney, an acute-angled linear cicatrix was noticed upon the posterior surface. The wound seemed to have quite healed externally, and upon cutting along the original track it was found to extend through the secreting structure of the kidney, and to terminate at one of the calyces. The line of the wound was marked by a yellow streak; but the tissue seemed very little degenerated in its neighbourhood. There were also two patches, about one-third of an inch in diameter, just beneath capsule in neighbourhood of the wound, where tissue was converted into a yellow fibroid structure much resembling the results occasionally following embolism. Ureter quite healthy; urinary bladder much distended, and, when incised, was found to contain a very large, firm, spherical clot, moulded to interior, and presenting at its centre a small cavity, containing turbid urine; this cavity communicated with urethra, and was evidently the channel of escape for the urine.

The progress of the case, especially the progressive improvement in the condition of the urine, and the post-mortem appearances of the kidney, alike lead to the belief that the wound of this organ had almost entirely healed, and that no very serious impairment of its secreting power would have followed. It appears probable, from the lesions in the left pleural cavity, that a subacute pleurisy had been excited at the time of the injury, and that an acute exacerbation had occurred about ten days subsequently. This occurrence is the more to be regretted since the position of the wound, and the chemical and microscopical characters of the urine, so positively established the diagnosis, that, had recovery ensued, the fact might have been considered demonstrated that a penetrating wound of the kidney may occur without causing death, or establishing any chronic disease of the wounded viscus.

Dec. 26. *Spinal Meningitis.*—Dr. W. PEPPER, in presenting the specimen for Dr. J. S. BODINE, of Trenton, read the following history, drawn from the notes of Dr. B.: John A. L., æt. 24, came under observation November 2, 1867. In the winter of 1863–64, while in the army, he suffered from a severe and protracted attack of articular rheumatism, affecting the endocardium also; and in 1864–65 he had again a similar attack. After this he was removed from active duty until his discharge from the army, in June, 1865, when he returned to his occupation as a labourer, which he followed until a few days before his last illness. During this time he complained frequently of vague rheumatic pains, but was never prevented from working until October 20, when he had a fall from a wagon.

Nov. 2. Ten days after this he started for Trenton, and reached there the same day, and sought a night's lodging at the Almshouse. He was observed to stagger in his gait, and was supposed to be drunk. The following day he felt sick, and when seen at 3 P. M. had a hot skin, frequent pulse, and intense frontal headache; tongue slightly furred. His nose had bled two or three times during the day. Ordered a febrifuge and laxative.

4*th.* Has been somewhat delirious during the night, and still complains of violent frontal pain and general soreness; pulse 88. Remembers nothing of his past history, and can give no account even of how he reached Trenton.

5*th.* Fever and headache somewhat abated; mental condition remains the same, with muttering or noisy delirium. There is a slight tendency to retraction of head; tenderness on pressure over cervical vertebra, and marked general hyperæsthesia.

6*th.* Eyes suffused; internal strabismus most marked in the right side. Busy delirium, with marked muscular tremor.

8*th.* More quiet; strabismus marked; double vision, with hallucinations of sight, and still some muscular tremor.

10*th.* Intense headache again, with febrile excitement. Towards noon he became comatose; lost power of speaking and swallowing, and apparently had paralysis of left side of face and of right side of the body, with drawing of head to the right, and total insensibility of pupils to light.

12*th.* Able to move right arm with difficulty; feces and urine discharged involuntarily. Death took place November 13, less than two weeks after beginning of attack.

The treatment consisted of blisters to back of neck, and iodide of potassium in full doses, given in camphor water.

Post-mortem examination twenty-four hours after death.—Body much emaciated, and marks of numerous scarifications over spinal region. Lungs presented a few pleuritic adhesions, and hypostatic congestion of the lower lobes. Heart and pericardium healthy; abdominal viscera also healthy. *Head*—slight thickening of membranes over convexity of brain;

abnormal amount of subarachnoid effusion. There was also an increased quantity of serum in the ventricles.

The following description has been made after the cord has been immersed in strong spirit for two months: The brain substance was somewhat injected; the membranes at the base of the brain were very positively thickened, and this alteration increased upon approaching the pons Varolii. Over the under surface of the pons and medulla the free surface of the membranes was shaggy and roughened; and on raising them they were found to be very abnormally adherent to the surface of the cord. This adhesion was due to delicate processes, probably containing vessels which entered the nervous substance in great numbers, so that when the membranes were removed the surface of the pons and medulla presented an unusually porous appearance. The attached surface of the membranes was also roughened. The thickness of the meninges varied from less than one line to more than two lines; this latter thickness being only noticed at a point corresponding to the sulcus between pons and medulla. The thickening of the meninges was entirely due to the development of dense fibrous tissue. At the upper part of the left anterior pyramid, just at its junction with the pons, and corresponding to the point of greatest thickening of the meninges, there was a small transverse elevation, one line in height and about three lines long. On section this seemed no more dense than surrounding nervous substance, but of rather darker colour.

The results of *microscopic* examination of this little projection were rather unsatisfactory, owing to the prolonged maceration of the specimen in spirit; these points were, however, quite clearly made out; the absence of any abnormal cellular elements, and increase in the connective and fibrous tissue, and the presence still of a considerable number of not much altered nerve-tubes. No other peculiarity of the nervous substance in any part of the cord was noticed.

The meninges remained somewhat thickened for a short distance below level of the medulla, but were probably not abnormal from the dorsal region downwards. It may be remarked that the immersion of the specimen in alcohol had rendered it difficult to form any positive opinion as to the duration of the lesion of the spinal meninges. The symptoms, however, as may be observed, and as Dr. Bodine very justly remarked at the time, so closely resembled those of so-called epidemic cerebro-spinal meningitis, as to forcibly suggest that this may have been a case of that nature. On the other hand, however, the firmness and advanced organization of the inflammatory exudation, and the numerous adhesions which had formed, appear to point to an attack of rheumatic meningitis at some previous period, and to render it likely that death resulted from a renewal of the morbid action.

1868. *Jan.* 9. *Primary Cancer of Fundus of Uterus; Death from repeated Hemorrhages.*—Dr. WILLIAM PEPPER, in exhibiting the specimen, narrated the following history of the case obtained from Dr. Getchell, under whose care the case occurred :—

The patient was a married woman, aged 35, and the mother of three children, the youngest being three years old. Since the birth of this child, she has had six severe floodings, which she regarded as miscarriages—the last about four months before her death. Dr. Getchell was called to her nearly two and a half months after this supposed miscarriage, and found her losing blood rapidly. The os uteri was quite healthy, the uterus movable and not very much enlarged. The bleeding was readily checked by astringents, but recurred in a few days, when it was again arrested by the introduction of a sponge tent, and powerful astringents into the cavity of the uterus. Hemorrhage returned in less than a week, when Dr. W. Hunt saw her in consultation; ether was administered, the cervix dilated, and a mass detected the size of a large walnut, springing from upper segment of posterior wall; this was so soft that it readily broke down under manipulation, and was extracted piecemeal. Astringents were introduced, and no hemorrhage occurred for about a week, during which time the woman, who had become extremely anæmic and prostrated, rapidly improved. The appearance of the fragments removed, led to the hope that the mass had been the retained placenta of the ovum discharged three months previously; but when on the return of hemorrhage, a week after, the uterine cavity was again explored, and the growth from posterior wall found to be again appearing, the diagnosis of cancer was positively formed. From this time until the date of her death, January 8, copious and uncontrollable hemorrhages occurred at short intervals, and rapidly exhausted her.

Post-mortem examination by Drs. Getchell and Pepper.—Tissues blanched; a fair amount of fat, however, still preserved; abdomen alone examined; no lesion was found in any organ, excepting the uterus; the uterus was retroverted, but quite movable; no abnormal adhesions whatever; the peritoneal investment smooth and glistening; the body of the organ increased to about double the normal size, but exceedingly flaccid and relaxed. Upon cutting through the anterior wall, the uterine cavity was found enlarged, and the cervix and os were so much dilated that it was impossible from examining the mucous surface to detect the line of insertion of the vagina, the cervix being entirely obliterated. There was, however, no disease of the uterine walls, excepting at a point on the posterior wall about three-fourths of an inch from the fundus, where a mushroom-like growth with a broad sessile base projected into the cavity. This mass, which was the stump of the tumour removed, was not more than three-fourths of an inch in height, of a dirty gray colour, and lax, doughy consistence. On section, its tissue was of a soft, fleshy character, and of a delicate pinkish gray colour; toward its base it became blended with the tissue of the uterine wall. There was, however, no induration or thickening of the uterine tissue, even immediately beneath it. The mucous membrane of the uterus was much stained and discoloured, but not otherwise abnormal.

Microscopic examination showed the growth to be composed of very numerous small fusiform, nucleated cells, interspersed with which were many quite large, irregularly shaped cells with single large nuclei. These cells were for the most part round or oval, though some caudate ones were also seen. The tissue was evidently undergoing degeneration, as a good deal of free oil, many granule cells, and some plates of cholesterin were also present.

Twin Conception; Abortion of one Embryo at an early period with Retention of the Membranes until after normal labour at full term. Dr. GEO. PEPPER gave minute details of a case of this kind.

April 9. *Ovariotomy; Bilocular Cyst. Operation, January* 3, 1852; *Successful.*—Dr. J. E MEARS exhibited the specimens for Dr. W. L.

ATLEE, and read the following history of the case from which they were derived.

Jan. 5, 1851. Mrs. M. Q., aged 67½ years, consulted me in reference to an abdominal tumour. Menstruation commenced at the age of 16 years, and has always been regular. She married at the age of 23 years; has had seven children, the youngest being 24 years old. Labours, though severe, were never instrumental. Has never miscarried. Has always enjoyed good health, with the exception of an attack of typhoid fever when 40 years old, and which confined her to the house for three months. She recovered from this with an entire change in her menstrual habits, becoming irregular, and continuing so for two years, when it entirely left her, but was followed by leucorrhœa. She subsequently recovered a good share of health. Her ancestors were healthy, and lived to old age.

She began to enlarge about two and a half years since, the enlargement having been first observed by her daughter. It was first noticed in the centre of the abdomen, and gradually increased, varying, however, in the rapidity of its growth. For the last three months she has suffered great pain, extending from the umbilicus around the hips, resembling strong after-pains, with cramps in the groins, accompanied with great distress in the stomach and sides.

The patient is larger than a woman at full period of gestation. The enlargement embraces the whole abdominal region, and the shape is uniform, with the exception of a mamma-like protuberance at the umbilicus. Change of position does not change the contour of the abdomen. Over the whole region of the tumour, and in different positions of the body, percussion returns a dull sound. Fluctuation perceptible everywhere, and resembles that of a thick fluid. Over the left side fluctuation less distinct than elsewhere, while here is the greatest resistance to pressure. When patient is recumbent, at the most elevated part of the abdomen, in the umbilical region, can be *seen* a tumour, resembling the female breast, five or six inches in diameter, and superimposed upon the deeper seated large cyst. This small tumour is cystic, can be fluctuated, and slightly movable upon the other. Between the periphery of this tumour and the body of the larger cyst beneath there seems to be a thin fluid in the cavity of the peritoneum. The patient being much emaciated these evidences are very plain. Pelvis free from tumour; the uterus *in situ*, its os open to receive the finger, quite movable, and apparently attached to the tumour by a long pedicle. The sound enters only about one inch, and causes pain. Measures round the umbilicus 40 inches, from xyphoid cartilage to pubes 19 inches, between the superior spinous processes of the ilia in front 23 inches.

Bilocular ovarian cyst diagnosed.

17*th*. I was requested to see Mrs. Q. again, in consultation with Dr. William Gardener, who had been in attendance upon her for several days. She was now suffering great distress throughout the whole abdomen, and had been confined to bed for the last week. The size of the abdomen had increased, particularly the region of the umbilicus, which was exceedingly sensitive to the touch, and the subcutaneous cellular tissue over the small cyst was in a state of inflammation. As she was suffering intensely, and her strength failing rapidly, we thought it proper to relieve her for the time by tapping. Entering a large sized trocar two inches below the umbilicus in the linea alba, I first opened the small cyst and drew off twenty-four ounces of thick, opaque, reddish fluid, which coagulated strongly by heat. After this was emptied, while the canula was in place, I again introduced the trocar, and penetrated the septum into the cavity of the large cyst, taking away twenty-two and a half pints of a much clearer fluid, of a yellowish-green colour, which also coagulated by heat. The emptying of these two cysts caused the walls of the abdomen to incurvate, and no smaller masses could be felt in any part of the cavity.

Nov. 29. Mrs. Q., having recovered rapidly after the tapping, passed through the summer pretty comfortably. To-day, however, I was sent for to relieve her of great suffering and distress, and which was accomplished to a slight degree by anodynes.

Dec. 9. The distress has become more and more urgent, and anodynes being of no avail, she desires the tumour to be removed. But in consequence of her great age I gave no countenance to so grave an operation. She urged it, and I at last consented, provided the operation met the approbation of Prof. W. R. Grant. This precaution was dictated by the fact that this was the oldest case on record, that the propriety of ovariotomy was still *sub judice*, and that all the leading members of the profession in Philadelphia were hostile to it.

10*th*. Prof Grant saw the case with me. Abdomen exceedingly tense and full, and two cysts traceable as before, but larger, and a spot, sore on pressure, is complained of in the left groin. Pelvis empty, uterus in place, os patulous, but the cervix and body not easily recognizable. Sound enters about one inch, and causes great pain. At this interview all the dangers of the operation were fairly presented to the patient, and still she persisted in demanding it. We agreed, under the circumstances, that the patient was entitled to avail herself of the only chance of life, and that an operation was justifiable.

Soon after this, my brother, Dr. John L. Atlee, of Lancaster, saw the case with me, and coincided in opinion. It happened just at this time that her husband was stricken down with a severe attack of pneumonia, which terminated fatally in a few days after. This suspended all action in reference to Mrs. Q., aggravating all her symptoms, and inducing great mental distress.

January 1, 1852. Not being able to tolerate her sufferings longer, and the danger of delay becoming imminent, she decided to have the operation performed on Saturday, the 3d inst. Consequently I ordered her to take a dose of castor oil the same night, to eat no solid food afterwards, and to live exclusively on liquids, such as beef-tea or broths. Pulse 104.

3*d*. 11 o'clock A. M., the following gentlemen had assembled: Drs. Gardener, Grant, Henry H. Smith, William B Page, and Green; and Messrs. Drysdale, Atlee, Varian, Reed, Morgan, Jackson, Gilbert, and Fenner, medical students. Temperature of room 80° to 84°. Pulse 110. The anæsthetic agent, composed of two parts of concentrated sulphuric ether and one part of chloroform, liquid measure, was given in charge of Prof. Smith, and when sensibility was destroyed I made an incision four or five inches long in the linea alba below the umbilicus, carrying the knife boldly through the walls of the abdomen down to the surface of the tumour. Upon opening the peritoneum some serum escaped, and the small cyst came immediately into view. Passing my index finger between it and the walls of the abdomen I at once encountered adhesions, which I rapidly broke up to the extent of several inches around the opening, as far as the finger could reach. I now punctured the small cyst with the large trocar, and after emptying it, carried the trocar through the septum into the large cyst and drew off a large quantity of fluid, but did not succeed in completely emptying it. On attempting now to draw the flaccid tumour through the opening made, I found it impossible, and was compelled to enlarge the incision downwards to the extent of two inches more. After this I succeeded in dislodging the entire mass from the cavity of the abdomen. All the time I was endeavouring to accomplish this, and also after it was done, the walls of the abdomen were carefully compressed by the hands of assistants, so as to completely prevent the ingress of air to the peritoneal cavity. The pedicle was three or four inches wide, varying from one-quarter to one-half an inch in thickness, filled with large engorged veins, and attached to the left side of the uterus. The Fallopian tube, which formed part of it, was severed in order that it might not be included in the ligature. A needle, armed with a double ligature, was now passed through the centre of the pedicle, and each half separately tied. The tumour was separated, the tied pedicle allowed to drop into the pelvis, the ends of the ligature kept out, parts carefully cleansed, and wound dressed with seven twisted sutures, the whole secured with the ordinary bandage, and cold water-dressings applied. Gave a small teaspoonful of elixir of opium.

The patient bore the operation well. There was not the least distress of the stomach and bowels. The pulse was pretty well sustained during the operation, occasionally flagging, and at one time the anæsthetic being given too freely some alarm was created, but cold water being dashed into the face, and the tongue drawn out, she soon revived. The pulse settled down to 96 before I left her.

The tumour consisted of two cysts, a large and small one, and embraced the left ovary. The uterus and right ovary were healthy.

3d. 5½ P. M. Patient very comfortable; pulse 90, full and soft; skin soft; tongue clean and moist.

4th. 9 A. M. Has passed a very comfortable night, better than for the last three weeks, having slept soundly most of the night. Respiration 16, full and regular; pulse 80 to 86, full and soft; catheterism ℥x of healthy urine; skin warm and moist. All the symptoms highly favourable. 9½ P. M. Pulse 90 to 100; complains of pain in chest; some spasmodic action of diaphragm, and eructations of wind. Ordered a teaspoonful of elixir of opium. Considerable thirst.

5th. 9½ A. M. Doing well; pulse 98 to 103, full, soft, and regular; skin warm and moist; tongue furred and disposed to dryness; considerable thirst. Changed dressings to wound, which looks well. Abdomen perfectly flat as it was after the operation. 5 P. M. Continues comfortable; skin the same; respiration easy and natural; pulse accelerated, 115, but soft and full; complains of no pain; a little uneasiness in her bowels occasionally from flatus. Catheter, ℥viij of amber-coloured urine.

6th. 9½ A. M. Complains of the bladder; drew off four or five ounces of phosphatic urine; pulse 96 to 98; changed dressings and lifted her to another bed. Improved her diet; everything quite favourable; flatus passes per anum. 6½ P. M. Still doing well; pulse 102 to 104, of good character; countenance cheerful; abdomen flat, soft, and free from soreness; changed her garments.

7th. 9½ A. M. Improving; pulse 88 to 100, full and soft; changed dressings and bed; allowed better food.

8th. 9½ A. M. Had a very comfortable night, and says she feels quite well; pulse 96 to 100; skin natural; tongue slightly furred but moist;

thirst moderate. Passed urine without catheter, and flatus passes readily. Ordered a small dose of oil, which brought away a small feculent discharge.

9*th*. Removed three needles, wound healing nicely.

10*th*. Removed balance of needles (four). Wound healing and patient getting on admirably.

11*th*. Discharge along the track of ligatures quite free.

18*th*. Patient has steadily improved, and to day walked across the floor.

31*st*. Ligatures came away.

The patient recovered perfectly, becoming fat and hearty, and lived until April 2, 1868, being in her eighty-fifth year, and then dying from debility.

Autopsy, April 4, 1868, by Dr. J. E. Mears.—Present, Drs. Atlee and Gardener. Body somewhat emaciated; skin discoloured and shrivelled; abdomen slightly distended by fluid; lower extremities œdematous; surface of abdomen smooth and regular; cicatrix scarcely traceable. On close inspection it is discovered as a small line in the linea alba, three inches in length, extending from a point three-quarters of an inch below umbilicus to a point two and a half inches above pubes. Section of the abdominal walls was made so as to include the cicatrix; walls thin, but little adipose tissue. Reflecting the portion of abdominal walls including the cicatrix, the pedicle was found attached to its under surface. Pelvic cavity filled with serum. No adhesions or traces of inflammatory action could be found at any point. Visceral and parietal surfaces of peritoneum smooth and glistening. Position of intestines proper. Uterus small, occupying its normal position, and freely movable, the length of the pedicle (three inches), preventing traction. Right ovary healthy, firm and contracted. Uterine arteries have undergone calcareous degeneration; bladder in a state of chronic inflammation; walls thickened; other organs not examined.

Remarks.—This specimen presents features of interest, which are enhanced when considered in connection with that of similar character presented to the Society by Dr. W. W. Keen for Dr. Atlee, Nov. 14, 1867, an account of which appears in the Reports of the Society in the *American Journal of Medical Sciences* for April, 1868. Combined they exhibit the results of operative interference at periods of life widely separate. In the first case, the disease manifested itself at the early age of fifteen, and one year later the operation of ovariotomy was performed. Notwithstanding the existence of complications and unfavourable conditions, the patient made a rapid recovery, and lived six years after the operation, enduring the hardships incidental to the life of a public prostitute, yielding finally to an attack of typhus fever, combined with the influences of debauch and exposure. In the second case, we have the opportunity of observing the results of the operation in a patient sixty eight and a half years of age, who, at the time, was worn out by great physical suffering, to which was added great mental distress, induced by the sudden death of her husband. This patient recovered without an untoward symptom, and lived in the enjoyment of good health to the age of eighty-five years.

In the valuable table, prepared with great labour and care by Dr. Atlee in 1851, comprising "a synoptical history and analysis of two hundred and twenty-two cases," being at that time "all the known operations of ovariotomy from 1701 to 1851," we find that the oldest person subjected to operation was the first patient of Dr. Atlee, upon whom he operated in 1844, aged sixty-one years. The youngest subject was a patient of Mr. Cæsar Hawkins, in whose case the operation was performed in 1846, at the age of eighteen.

Sept. 10. *Larynx of a Tubercular Subject, extensively ulcerated.*—Dr. James Tyson presented, for Dr. WM. CORSON, of Norristown, the specimen, the epiglottis in which had been completely removed by ulceration, while there was also extensive ulceration of the follicular kind occupying the posterior of the fauces and the interior of the larynx as far as the vocal cords, affecting, however, the true vocal cord of the left side only. The most interesting feature in connection with the case was total absence of alteration of voice up to the time of death, which occurred August 30. The patient, C. H., a bricklayer, aged 49 at time of death, had been an industrious, hard-working man throughout life. Though possessed of a tubercular history, he enjoyed moderately good health until January 1, 1868, but continued at his occupation until May 7, 1868. His symptoms were almost entirely referred to the fauces, producing painful deglutition, which for some time previous to the 13th of August, when he was visited in consultation by the writer, was most extreme, and continued thus until death, so that it became almost impossible to nourish him in the usual manner. Emaciation and exhaustion progressed steadily and rapidly, and the patient died of inanition, August 30, 1868.

Repeated laryngoscopic examinations by Dr. E. M. Corson revealed the following appearances: Intense redness of fauces; epiglottis and rima glottidis extensively ulcerated, and covered with a whitish slough; the follicular glands at the base of the tongue also enlarged and ulcerated.

The symptoms pointing to thoracic disease were either not marked, or were masked by those referred to the fauces; but physical exploration revealed tubercular deposit at the apex of the left lung. The larynx was removed by Dr. E. M. Corson, but an examination of the lungs was not permitted. As is generally the case in tubercular laryngitis, no tubercle was present at the seat of ulceration, as was shown by microscopical examination, the ulceration being mainly follicular. Though it is uncommon for even the slightest inflammation in any of the cartilages of the larynx to be unattended by change of voice, yet the case is by no means a unique one. In a mere history of a pathological specimen it is out of place to report similar cases, yet we may refer to two cases of Prof. Hermann Beigel, quoted in the *Boston Medical and Surgical Journal* of August 13, 1868, in which the epiglottis was completely removed, not only without symptoms of phonation, but even without pain.

Nov. 12. *Tubercular Disease of Lungs; Extreme Aortic Disease, with Peculiar Murmur; Tænia Solium.*—Dr. WM. PEPPER reported the following case:—

T. J., æt. 29, admitted to the Philadelphia Hospital March 3, 1868. English by birth. Had suffered several years with tænia solium, from which he was temporarily relieved by koosso. On admission, he was passing links; and after the administration of ℥j of pumpkin-seeds, the entire worm was discharged. Signs of pulmonary tuberculosis began one year before admission.

There were the physical signs of consolidation with excavation of the upper lobe of the left lung; the heart's action was very rapid and easily excited, running up to 130; there was a distinct purring sensation on palpation; the heart-sounds were heard throughout both sides of the thorax, and, in addition, there was a moderately harsh systolic murmur heard at the pulmonary cartilage and for two inches along the left second rib. There was also a murmur, seemingly partly presystolic, heard to left of sternum, out to left nipple. There was no abnormal cardiac murmur audible at the aortic cartilage, angle of left scapula, or in left axilla.

These physical signs persisted until death, excepting that the signs of consolidation of the lower lobe, and increasing excavation of the upper lobe of the left lung were developed. Œdema of the legs appeared about six weeks before death, and during the last three months he suffered with colliquative diarrhœa.

Autopsy.—Right lung large, very emphysematous, studded with recent miliary tubercles.

Left lung has a huge cavity, involving the anterior part of the whole upper lobe, rest of the lobe a network of vessels and bronchial tubes surrounded by fibrous tissue and dense tuberculous lung-tissue. Left pulmonary artery and its first branches imbedded in dense fibrous tissue. The lower lobe was consolidated by cheesy tubercle.

Heart.—Pericardium healthy. Heart itself not much enlarged. Mitral and tricuspid valves healthy. Aortic valves rigid, with nodules of calcareous deposit; the valvulets were blended with each other, and partially separated from their attachments, so as to form in reality little more than one valve, like a perforated diaphragm. They did not, however, allow much regurgitation.

The cause of this aortic disease is very obscure. There was no history of rheumatic attacks, no cause of obstruction to passage of blood through the aorta existed, and he had not complained of any symptoms of circulatory embarrassment. The sounds to which it gave rise were undoubtedly very much modified by the condition of the lungs. The great enlargement and marked emphysema of the anterior border of the right lung probably concealed the murmur at the aortic interspace; while, on the other hand, the large cavity in the left lung, which was in immediate contact with the aorta, must have aided in developing and transmitting the murmur towards the left. It is quite possible, also, that the compression of the pulmonary artery by the dense tissue surrounding it created a murmur. It appears, therefore, that it would have been almost impossible to foretell the existence of aortic disease.

The atrophic tendency of the tuberculous disease is seen in the size of the heart, which would certainly have been much larger, had the patient been in vigorous health. And yet so complete was the absence of symptoms, and of any appearance of recent diseased action, that the lesion of the aortic valves must have been of very long standing, and have had in reality but little effect in interfering with the circulation. The only dropsy ever noticed in the case was œdema of legs, which merely appeared somewhat earlier and to a rather greater degree than in most cases of phthisis.

Intestine.—No traces of the tapeworm were found. The solitary glands of the ileum were in places ulcerated. The mucous membrane of the colon, from the ileo-cæcal valve to the descending portion, was almost entirely destroyed by tubercular ulceration.

Nov. 26. *Rupture of Gall-Bladder; Gall-Stones.*—Dr. WM. PEPPER presented the specimen, with the following remarks:—

Moses B., æt. 64, admitted to the Pennsylvania Hospital September

29, 1868. He had been struck by a locomotive while standing on the track, and was thrown to some distance off it. He was unable to answer questions, and died the following morning. The left tibia was found to have been fractured; there were contusions on the left side, with fracture of the lower four left ribs, and the left pleural cavity contained blood. On opening the abdomen, clots of blood were found on the right side, directly under the liver; there was, however, no laceration or rupture of this organ. The gall-bladder was of about normal size, and presented a linear rupture on its under surface, extending an inch and a half from the fundus; there was an angular calculus impacted near the opening of the cystic duct, but the ducts were all found to be pervious. The peritoneal cavity contained some bile mixed with blood, and, in addition, three calculi, two large and one very small, which had escaped from the gall-bladder. The combined size of these four calculi was such that they must have nearly filled the gall-bladder. There was no evidence of ulceration of the mucous lining of this viscus.

Dec. 24. *Tumor of Tibia; Amputation; Secondary Hemorrhage; Death from Exhaustion and Pyæmia.*—Dr. WM. PEPPER presented the specimen, with the following history:—

M. McC., æt. 45, admitted to the Pennsylvania Hospital April 7, 1866. She was suffering from cancerous disease of the lower end of the right tibia and fibula, which had existed for twenty-five months. The leg had become very much enlarged at this point, but the central part of the growth had softened and discharged, forming a large cup-shaped depression, at least two inches and a half in diameter, with a thick, rounded, projecting lip. This depression opened on the antero-internal face of the ankle, and extended directly into the substance of the tibia; its surface was covered with flabby granulations. Over the external malleolus was a large, soft, almost fluctuating, nodule; on pressing which a sense of crepitation was developed. There were also several large nodules near this one. The skin over the diseased part was blended with the morbid growth, and purplish; the veins were enlarged up to the knee. The inguinal glands were enlarged and hard. She had some cough, with slight mucous expectoration; but no internal cancer could be positively detected. She was extremely anæmic, having lost much blood from the open surface of the growth. Amputation was performed through the knee-joint by Dr. Agnew, April 13, 1866. She did quite well, with some sloughing of skin flap, for two weeks, but then had a severe secondary hemorrhage, which was controlled by an acupressure pin applied to the popliteal artery. After this she sank steadily, with many of the symptoms of pyæmia, and died May 11, 1866, twenty-eight days after operation. No autopsy was allowed. The disease extended several inches up the shafts of the bone, which were filled with a colloid-looking substance. On macerating the specimen and removing the soft parts, the lower end of the tibia was found almost entirely destroyed, the compact layer being expanded into a very thin lamina, the curve of which was almost spherical, but which was deficient in many places, forming in places a coarsely reticulated bony layer, in others a series of long, delicate spicules.

Microscopic examination of the morbid growth within shaft of the bone, or from the outlying nodules, showed oval or rounded cells, with large nucleolated nuclei; a few caudate cells, and quite numerous large cell-like masses, of oval or irregular outline, containing from eight to twenty small, clear, oval nuclei, with small, dark central nucleoli.

1869. *Jan.* 1. *Report of Committee on a Tumour removed from Side.* Presented by Dr. HUNTER.

The tumour was of an oval shape, about eight inches in its long diameter. It was developed in connection with the fractured extremities of the ribs, and, in growing, had carried before it the intercostal muscles, inducing their atrophy: externally it was surrounded by a thin fibrous capsule. Its external surface was somewhat nodulated; the skin was adherent to the subjacent tissue, but was not ulcerated. On cutting into the mass, the greater part of it was found of a soft, almost brain-like, consistence, readily breaking down under pressure; it was of a yellowish-white colour, and imparted an unctuous feeling when rubbed between the fingers. The central parts of the mass, lying nearest to the ribs, presented the greatest degree of this softening and degeneration. On the contrary, some of the outlying nodules still retained the typical appearances of encephaloid cancer, presenting a grayish-white ground dotted with vascular patches, and exuding, on scraping, pure white cancer-juice. The ends of the ribs were found imbedded in the morbid growth, completely denuded of periosteum, and presenting a rough, spiculated surface. The growth had also advanced internally into the thorax, presenting a flat oval tumour projecting above the level of the costal pleura. The corresponding part of the pulmonary pleura was partially adherent, and was the seat of cancerous deposit half an inch in thickness. There were no distinct masses of cancer in the lungs, and the growth had encroached but little upon the pulmonary tissue.

Microscopic examination of the nodules which had not yet undergone degeneration showed the typical appearances of encephaloid cancer; numerous large cells of varied shapes, mostly fusiform, with one, two, or three large nucleolated nuclei. The central portions, as well as the portion involving the pleura, presented an extreme degree of fatty degeneration. In addition to a very large amount of free oil in granules and drops, and numerous crystals of cholesterin, there were many fully-formed granule-cells, and most of the other cells present contained many oil-granules and small drops, in some cases obscuring the nucleus entirely.

The history of the case, as well as the post-mortem examination of the tumour, shows that it found its starting-point in connection with the ribs which had been fractured eight years before.

WILLIAM PEPPER,
CHARLES T. HUNTER.

Jan. 14. *Melanotic Cancer of Liver.*—Dr. WILLIAM PEPPER, in presenting the specimen, read the following history of the case from which it was obtained:—

H. B., æt. 48, was admitted to the Philadelphia Hospital in 1865. In 1860 he received an injury of right eye from a piece of stone. The eye continued inflamed for two years, by which time he was totally blind. In the spring of 1865 a small tumour appeared protruding from the eyeball, which was removed by Dr. W. Pancoast. In the fall of 1867 the tumour reappeared, and was again removed by Dr. Maury, and on microscopic examination by Dr. Tyson, was found to present characters of melanotic cancer. Between August 1, 1868, and October 1, 1868, the tumour reappeared, and was extirpated three times by Dr. Lodge. After the last operation, gnawing, dragging pain in the right hypochondrium appeared, and death occurred November 30, 1868. There was neither jaundice nor œdema.

Autopsy.—The cancerous growth extended back in the orbit to the optic foramen, but did not involve brain. The orbital plate of the frontal bone was absorbed by its pressure. The chain of cervical glands on right side were enlarged, and so were the post-sternal glands. The liver was enormously enlarged, weighing 11 lbs. 12 oz.; the transverse diameter of whole organ 14½ inches; the antero-posterior of the right lobe 11 inches;

thickness of right lobe 4½ inches. The surface presented numerous small, flat nodules, but no large projecting masses. The peritoneum was in places thickened, opaque, puckered; but there were scarcely any abnormal adhesions. The colour of the external surface varied much, some of the nodules being pinkish, gray, or flesh-coloured; but many others were intensely black, looking almost like ecchymoses of the subperitoneal tissue. On section the mass of disease was found to occupy the upper stratum of the organ, the lower part being the seat merely of a few small nodules. The hepatic tissue was yellowish and fatty. The nodules in the substance of the organ presented the same varieties—some very black, of firm encephaloid consistence, yielding on pressure a black fluid like China ink; and others of a light pinkish colour. The entire upper part of the right lobe was converted into an encephaloid mass of variegated colour, presenting patches of light flesh colour, interspersed with others of a pure black.

The *microscopic examination* by Dr. Tyson showed a large amount of black pigment, both free, in the form of irregular masses, and inclosed in cells; reddish hematin flakes, large and small cells of irregular size and shape, containing in most instances but a single nucleus, and often shrivelled looking, or containing fat granules; free nuclei and free oil granules and drops. There was no cancer in any other organ.

The points of most interest connected with the case seem to be, the apparent existence of a local exciting cause; the injury to the right eye, five years before the development of the tumour in the orbit; the repeated recurrence of the growth *in situ* after apparently complete extirpation; the enlargement of the cervical and post-sternal lymphatics; the limitation of the secondary disease to the liver, and especially to the right lobe; the characters of the pigment, and its presence not only in the form of free masses, but of granules inclosed in cells, and taking the place of the ordinary cell contents.

Jan. 28. Compound Placenta of Twins.—Dr. E. A. SPOONER presented the specimen, with the following history:—

The mother suffered a fall some four weeks before the termination of gestation. Labour supervening at term, a child was found presenting by the right shoulder, which was delivered by podalic version, alive, and weighing eight pounds. A second child subsequently presented also by the right shoulder, which was delivered, like the first, by podalic version, which when delivered weighed nearly eight pounds, and had the appearance of a fœtus some three or four weeks dead, the cuticle peeling readily. The cord of the dead fœtus was black, but had not undergone disintegration in its near proximity to the fœtus; hence it was ligated and divided. The placenta presented the following appearance: the point and area of attachment of the healthy cord appeared perfectly natural, but in the immediate neighbourhood of the attachment of the injured cord, extending some three inches in diameter, the spongy structure of the placenta had suffered disintegration, whilst the large branches of the bloodvessels continued intact. The cord itself appeared crushed and torn, and at about two inches from its placental attachment was completely divided. The point of extreme injury, at the time of the accident, would then seem to have been the one just described—say about two inches from the placental attachment—and this was probably the seat of injury, which resulted in the death of the child. It should be observed that the placental line of demarcation between the two sacs was not noticeable, and that there was no bag of waters preceding the presenting portion of the second child. There was no undue sanguineous discharge, nor was the amniotic liquor which accompanied the delivery of the first child unusually dark coloured.

From all the circumstances of the case, the conclusion would seem to be justified that the death of the second fœtus resulted from the injury sustained by the cord in its near proximity to the placenta; that injury probably not rupturing immediately the umbilical vein or artery, but so impeding the circulation as to deprive the child of the nourishment essential to its vitality. If such an inference is warranted, the case is not devoid of interest, adding, as it does, to the list of injuries which may destroy fœtal life.

Dr. SHERWOOD was reminded by this case of one in his own practice, which was quite similar. He was called, on the 21st of November last, to attend a healthy young Irish woman, in her first labour, and found a child presenting in the first position of the vertex. The pains were violent, and occurred as often as every half minute. He finally extracted the child, with the assistance of his hand only, and noted that the size of the abdominal tumour had decreased but little. On examination he found a second child, which was soon delivered, but had evidently been dead about four weeks. The bones of the cranium were loose, and there were other evidences of putrefaction. In this case, also, the cord of the dead child appeared twisted, as though ligated; and the patient, about four weeks previous to date of confinement, had met with a fall. The doctor had attributed the death, at that time, either to rupture of the vessels of the cord, or its being twisted in some way, perhaps around the limb of the child, as in a case reported to the College of Physicians by Dr. A. Nebinger.

Aneurism of Left Middle Cerebral Artery; Partial Right Hemiplegia; Aphasia; Eccentric Hypertrophy of Heart with Valvular Disease; Embolism of Spleen; Rupture of the Intracranial Aneurism, and Death in Thirty-six Hours. Dr. WILLIAM PEPPER, in presenting the specimen, read the following history of the case:—

C. R., æt. 28, from New York, admitted to Philadelphia Hospital August 5th, 1868. No history could be obtained. On admission, partial right hemiplegia; expression vacant, hearing apparently good; voice not lost, but unable to utter any articulate sounds. Heart's action excited; apex beat at sixth rib to left of nipple; increased area of percussion dulness; double blowing sound heard at apex, aortic cartilage and epigastrium; systolic murmur heard also in left axilla, at angle of left scapula, in vertebral gutter, and transmitted far into arterial system. Pulse 100, tense, bounding and jerking; visible pulsation of the smaller arteries. Ordered tinc. veratri viride gtt. vj; q. t. h.; potass. iodidi gr. xv, q. q. d. The partial paralysis of right side of face and of right arm disappeared; he still seemed giddy and walked unsteadily. Pupils equal; sight and hearing good, and he usually seemed to understand what was said to him, though not always, for when told to stretch out his hand he would protrude his tongue. He answered "yes" and "no" clearly, and usually correctly, though he sometimes seemed to employ them indifferently. So soon, however, as he tried to frame a sentence, he could utter only strings of jargon, which did not sound like any known language. He used oaths correctly at times; he was unable to give either his name, age, or occupation. He appeared to have been able to write with either hand, but when a pencil was given him, he wrote a series of letters and lines without meaning. If a book were given to him, he would appear to read fluently unintelligible jargon.

The treatment was persisted in, and patient steadily though slowly improved. The pulse became more quiet and less frequent, though still corded and jerking. The cardiac murmurs remained the same, and were diagnosticated as coming from hypertrophy, with insufficiency and roughening of both the mitral and aortic valves. The general symptoms improved more rapidly than the cerebral, so that all traces of paralysis had disappeared, and he was able to be out of bed and walk about, while yet his expression was to a certain extent unnatural, and he had not regained the power of coherent speech. This also improved, however, though a positive degree of aphasia persisted. He became able to write his name, though the last two or three letters were replaced by others; he could repeat the numerals and most of the alphabet, but could not frame intelligible sentences. He became conscious of this loss of words, and would show marked irritation, and could make us understand that he was perfectly conscious of what he wished to say, but was unable to recall the fitting words.

He remained thus, steadily improving, for about three weeks, when, without any appreciable cause, he grew suddenly much worse, his respiration became hurried and gasping, the pulse small and very frequent. The heart's action was confused, and all the murmurs much less distinct. Lungs were full of fine moist râles; the surface of body cool, and bathed in sweat. There was no delirium, but hebetude and extreme restlessness. The chosen decubitus was right lateral. There was no apparent paralysis. Œdema of feet appeared and spread very rapidly over the lower limbs, extending up to the line of the umbilicus, being very marked over all this space. He remained in this condition for thirty-six hours, becoming comatose, and then died.

Autopsy.—Brain: On removing the calvaria, congestion of the large meningeal vessels was seen. The exterior of the brain was apparently healthy, and there was no depression of any of the convolutions. The arteries at the base were healthy, with the exception of a few minute points of atheroma.

The right side of the brain was healthy throughout. On cutting into the substance of the left hemisphere, a clot was found running along the outer border of the corpus striatum through its entire extent, and extending somewhat in advance of its anterior extremity. The anterior lobe was thus involved, quite up to a point corresponding to the third frontal convolution. The optic thalamus was quite healthy. The inner part of the corpus striatum was firm and healthy, and the lateral ventricle contained but a small amount of clear serum. The effused clot was dark, soft, and mingled with broken-down brain substance. At some points the surrounding brain tissue was stained of the peculiar yellow colour habitually found in cases of old cerebral hemorrhage, as though there had been previous extravasation of blood. It is not probable that this resulted from the extensive hemorrhage which occurred thirty-six hours before death. The hemorrhage could be traced to a rupture in the walls of an aneurism of the left middle cerebral artery, about half an inch in diameter, which lay just in advance of the corpus striatum. The first part of the artery was quite healthy, and it then suddenly expanded into the spherical sac, into which it opened by a minute orifice. The aneurism involved all the coats of the artery; its walls were thin, and presented a rupture of the posterior surface. The sac was almost filled with soft and firm dark clots. There were no evidences of embolism in the brain, and no miliary aneurisms were detected.

The lungs were deeply congested and œdematous. The heart presented extreme eccentric hypertrophy, principally affecting the left cavities, and extensive disease of the aortic and mitral valves, consisting of vegetations with calcareous incrustations; these valves were also markedly insufficient. The liver was enlarged, and in a state of nutmeg congestion. The spleen was much enlarged, and presented several embolic patches. The kidneys were much congested, hard, and coarse-grained; they presented no traces of embolism.

Dr. Ashhurst was struck with a fact in one of the cases reported by Dr. Hughlings Jackson, which illustrates admirably the retention of the reasoning power while speech was lost. The patient in this instance had been in the habit of sending to an apothecary named Wall, and when he desired anything from this person's shop he indicated it by tapping upon the *wall* at the side of his bed.

Dr. Sherwood related a case of aphasia which came under his notice a year and a half ago in a gentleman, aged forty, who, while talking with a friend suddenly lost the power of articulate speech. When Dr. S. arrived, the patient was sitting up on a settee, and made attempts to answer questions put to him, but could only express a syllable here and there; he would transpose syllables, putting the latter syllables at the first part of the word. There was dilatation of the pupils. Eight cups were applied to the back of the neck, resulting in complete relief.

Dr. Mitchell remarked that this power to make use of oaths in patients with aphasia is not uncommon, and the present case confirms the statement of Dr. Hughlings Jackson, who says that words indicating strong emotional influences are much better retained than others.

In other cases of aphasial disease seen by him, the retention of the power to use habitual expressions indicative of amazement, and the like, after the loss of other speech, had been noted several times. In one instance, a French gentleman lost the familiar habit of using oaths in English, but was able to swear roundly in his native tongue. During recovery, the first English words which he could say were, "Oh, damn—my damn."

Dr. William Pepper remarked that there were several points of peculiar interest in connection with this case: 1st. The seat of the aneurism is that most frequent in such cases, the middle cerebral artery. Thus, in the 85 cases tabulated by Dr. Hutchinson, in his paper on "intracranial aneurism," in the recent volume of the *Pennsylvania Hospital Reports* (vol. ii., 1869), the middle cerebral artery was the seat of disease in 26 cases.

The basilar artery	was the seat of	aneurism	25	times
" middle cerebral	"	"	26	"
" anterior communicating	"	"	5	"
" " cerebral	"	"	9	"
" internal carotid	"	"	10	"
" superior cerebellar	"	"	1	"
" posterior cerebral	"	"	2	"
" posterior communicating	"	"	2	"
" middle meningeal	"	"	1	"
" vertebral	"	"	4	"
Total			85	

In age, nine patients were under 20, seven between 20 and 30, and the largest number, ten, between 50 and 60.

In regard to the mode of termination: it is that, also, which most frequently occurs, rupture taking place in by far the greater proportion of cases, the thinness of the sac rendering such a termination most probable.

There are also three points of especial clinical interest: 1st. The question of diagnosis at the time of his admission. 2d. The question of the diagnosis of the accident which preceded death by a few hours. 3d. The relations of the aphasia, and the paralysis affecting the muscles of the face and of the thoracic and abdominal extremity of the right side. The paralysis was slight, and the patient presented a confused and unnatural expression, and had aphasia. Attention was directed to the heart, and from the marked cardiac lesions it was thought probable that there had been embolism of one of the cerebral arteries of the left side. At that time, also, enlargement of the spleen was recognized, and it was suspected that this organ was likewise involved. There were no symptoms which could call attention to this aneurism, and in looking over cases where it has existed free from the complication of cardiac disease, scarcely one case in fifty has been diagnosticated, and indeed in only one instance on record was the aneurism actually foretold, the diagnosis coming no nearer in most cases than that of a tumour of the brain.

If there were marked lesion of the vascular system, especially with a tendency to aneurism in other arteries, the existence of the intracranial aneurism might be surmised by the symptoms of cerebral tumour associated with such tendency. But I do not know of any case in which this peculiar combination of symptoms existed. In this case, the very strong cardiac symptoms, and utter absence of history as to whether the cerebral symptoms had come on suddenly, as though from detachment of a fragment of a vegetation from one of the valves of the heart, lead me astray from the correct diagnosis, and the patient was thought to be suffering from embolism of the arteries of the left hemisphere. From the symptoms portrayed as present at the close of the case, I presumed that thrombosis of some of the large venous trunks had occurred, and I am quite at a loss to explain the sudden œdema of the lower extremities. It resembled much the symptoms apt to follow obstruction of the ascending vena cava, and it appeared as though some portion of fibrin might have obstructed the entrance of this vessel. But at the autopsy there was no such thrombosis found, and we must seek for the cause of this in some other manner.

In regard to the aphasia, he had many of the unquestionable symptoms of this disease. He was unable to speak articulately, but was able to understand what was said to him; he was able to articulate words habitual with him, as "yes" and "no," and certain oaths; to write certain words habitual to him, as his name; but even here he often replaced the last few letters of his name by letters which did not belong there. I did not try whether he was able to copy writing. In all these very striking points he presented the symptoms of aphasia.

The case cannot be made use of as bearing on Broca's statement, that the posterior part of the third left frontal convolution is the seat of the faculty of language. The lesion here was so very extensive, and the destruction of the brain substance was so complete, that it was impossible to say how much of this existed before the final rupture of the sac. But the ochre-coloured staining along the line of the corpus striatum, led to the belief that there must have been a previous hemorrhage to at least a slight extent, resulting probably from a partial rupture of the aneurismal sac. As, however, the lesion was limited to the anterior half of the left hemisphere, and to the motor portion of this side, the cineritious substance being quite healthy, it may be regarded as a case confirming the localization of *voluntary* speech in the left hemisphere. The preservation of consciousness, intelligence, and volition, shows also that the lesion in aphasia is not of the intellectual portions of the brain, but of the central motor nucleus through which the mental concepts must be transmitted to be formed into words. In accordance with this, we find in this case the lesion limited to the motor tract of the left hemisphere.

A Case of Sporadic Cholera terminating fatally by Suppression of Urine; with some Remarks on the Action of Mercurials on the Liver.—Dr. DACOSTA made the following remarks:—

On the 6th of December, 1867, I was requested by Dr. Keichline to see, with him, Mr. T., a strong, well-built man, forty-eight years of age, and who had been then sick for four days. Mr. T., after eating a hearty supper of terrapins, had been attacked with nausea and diarrhœa. So little, however, did he heed these symptoms, that he went out as usual the next morning; and it was only in the evening that the occurrence of the frequent passages obliged him to seek medical aid. The discharges were serous, yet still tinged with fecal matter and bile. There was the most intense craving for cold drinks, but an utter inability to keep anything on the stomach; even water, which, strict commands to the contrary notwithstanding, he drank by the pint, came up instantly. All attempts at medication by the stomach had to be abandoned, and he was nourished by injections of beef-tea and brandy, to which some laudanum was added. Under this treatment he began to improve, and the stomach was becoming settled, when a few teaspoonfuls of ice-cream, which he insisted upon swallowing, rekindled the gastric disorder in its full activity. The surface became very cold and blanched, and the aspect of the whole case on the evening of the 5th was that of the stage of collapse of cholera. When I saw him on the morning of the 6th, he was pale and cold; the pulse 72 and feeble; the first sound of the heart very faint. He had had but six discharges in the twenty-four hours, which, though serous, were not colourless. The urinary secretion was scanty; he stated that he passed only about one pint of urine in thirty-six hours. We attempted to give him mineral acids, but they were scarcely swallowed before being thrown up. Injections by the rectum—one ounce of brandy being given at a time—were continued; water in small quantities was allowed to be swallowed, and was not rejected; and in the evening one-half grain doses of calomel, sprinkled on the tongue every second or third hour, were well borne.

On Saturday, the 7th, the surface was still cold, though warmer than it had been; the pulse ranged from 76 to 80; he had passed several ounces of urine; the discharges from the bowels were not frequent, and were becoming much more coloured. In addition to continued frictions over the whole body, warm fomentations were applied to the abdomen.

On the morning of the 8th, we observed that the passages, of which he only had had two in the night, were coloured greenish, in fact presented precisely the appearance regarded as characteristic of calomel stools. But he had passed but little water, was drowsy, and looked like a person poisoned with uræmia. The tongue was cold, the skin cold, not perspiring, and devoid of urinous smell. During the day, two ounces of urine were drawn off by the catheter, all that had been secreted in twenty-four hours. The fluid was high coloured, contained a very moderate quantity of albumen, and yielded, when tested with nitric acid, but very few crystals of nitrate of urea. The calomel was suspended, the region over the kidneys dry cupped, and he was able to retain a small quantity of beef-tea by the stomach and a few doses of sulphuric acid. But the main treatment consisted in continuing the rectal injections, now, and indeed such had been the direction for twenty-four hours, without the addition of laudanum. Yet this treatment proved unavailing, and he sank into a state of stupor, which ended in death at noon of the 9th. During the last twenty hours, he had two or three coloured discharges from the bowels; he passed no water.

The *autopsy* was made forty-eight hours after death, with the kind assistance of Dr. Rhoads and Dr. Wm. Pepper, and with this result:—

Abdomen.—On opening the abdomen, the viscera were seen in their normal position. There was no peritoneal injection, but the jejunum and ileum were throughout irregularly congested. Eighteen inches above the ileo-cæcal valve, the mucous membrane was in a state of dark purple congestion, with points of capillary ecchymosis; near the valve but slight congestion existed. Both Peyer's patches and the solitary glands were very prominent; the former showed on the prominent portions minute black dots. At the upper part of the small intestine in and near the duodenum, an abundant light green viscid matter formed a thick coat on the surface of the membrane, excepting where this was denuded. Below this section of the bowel was a large collection of rather darker matter, distending the gut; there was no abrasion, but an attempt to remove the coloured mass took the epithelium away with it. The large intestine contained very little of the kind of contents mentioned; and as regards the coats, nothing but follicular prominence struck the eye. The greenish matter in the small intestine was found on microscopical examination to be an aggregation of stained epithelium; the microscope also showed that in the denuded, and smooth, anæmic looking portions, the villi were totally bare; only here and there were a few nuclei observed to be clinging to their surfaces. Chemically tested, the green matter in the small intestine, when acted upon with nitric acid, showed the most marked play of colours; the violet appearing almost instantly with great distinctness.

The liver was dark coloured; its vessels filled with a tarry blood; the gall-bladder was distended with a blackish-green bile.

The stomach showed here and there patches of not very intense congestion.

The spleen was small.

The bladder was firmly contracted, empty.

The kidneys were natural looking, rather small, not engorged; the cortical substance presented a slight yellowish discoloration; the mucous membrane of the pelvis was of normal character.

Sections of the kidneys examined under the microscope exhibited a very granular appearance of the cells, and much granular matter in the whole field. The tubules were crowded with epithelium; the membrane did not seem to be desquamated. There was everywhere a singular absence of capillary congestion. Muriatic acid did not clear up the granular matter; acetic acid did so to a very great extent.

Thorax.—The lower lobes of the lungs were congested. There was a dark soft clot in the right side of the heart; the right ventricle was fatty, much of the muscular structure having disappeared.

These specimens are exhibited to the Society, and the case placed on record for several reasons. In the first place it shows how kindred very bad cases of sporadic cholera are to the malignant epidemic disease; how difficult it may be in isolated instances to draw the dividing line. We have here the same intestinal lesion; the same suppression of urine. The difference consists chiefly in the character of the discharges, the absence of cramps, and in the history to which it is right to add that several bad cases of diarrhœa happened about the same time in the neighbourhood, but no fatal ones; moreover neither in the summer preceding nor in the summer following was cholera epidemic in the city. And death in the case reported must be attributed rather to the induced urinary disorder than to the intestinal lesion.

But a still stronger reason for recording this case is because it bears on a point now undergoing much discussion, whether mercurials act on the liver. Discharges changing under the use of calomel, becoming typical calomel stools, death taking place within about twenty-four hours after the remedy is suspended, coloured matter almost identical in appearance with the stools voided found in the small intestine, and a distended gall-bladder, would appear to be points impossible of explanation in accordance with the now so strongly advocated views. For instance, this case would almost seem to me by itself to upset the doctrine that the colour of the stools after taking calomel is not owing to the bile, but to the altered secretion of the glands of the large intestine. And as regards another view that calomel only causes the bile to be swept on before there is time for its absorption, it does seem strange that the kind of stools which this patient had should not have happened until after the remedy had been taken for some little time; not have happened when the passages were more frequent than before its administration. Whether calomel acts by irritating the upper part of the bowel, and by the irritation being reflected to the liver and increased quantities of bile thus evacuated, or whether it acts by directly stimulating the viscus to increased secretion, is not elucidated by these remarks. But this question has always struck me as one which has been needlessly dragged into the discussion, for it is really substituting the inquiry *how* an article acts for the inquiry, whether it acts *at all.*

Viscera of a Diabetic Patient.—Dr. HARRIS presented the specimens, and read the following history:—

L. L., merchant, died October 25, 1868, of diabetes. Dr. Harris was called to see him four days prior to his death. At that time he was seized with vomiting, first throwing up his food, and subsequently black fluid blood. He had, in all, three large vomitings of blood, and afterwards two more of a greenish fluid, during the four days, at long intervals; after each of which he was almost entirely relieved of nausea. He urinated ten or twelve pints per day, getting up about five times in the night, with a full bladder each time. His urine was decidedly saccharine, of sp. gr. 1036. His thirst was excessive, and, I learned, had been for some time. Owing to the prostrated state of the patient it was difficult to get even an imperfect history of his case, but there is reason to believe that the diabetes had existed several months, and that he had had a previous internal hemorrhage, which passed off by the bowels, and was presumed to be a dysentery. He was at this time in the country, and considered very dangerously ill, but was not treated for the diabetes. After the hemorrhage ceased he returned to Philadelphia, and was able to be out of doors occasionally for the few days which intervened between his return and the attack of vomiting. He complained only of thirst, weakness, and the inconvenience of excessive urination; but, notwithstanding this, believed that he was improving in health. He never had any proper treatment, either dietetic or medicinal, for his diabetes, being usually his own physician, and trying hydropathy, homœopathy, or alopathy, as the fancy seized him.

At the time of the first attack of hæmatemesis he presented the appearance of a man very much reduced by previous disease, being pale, and exceedingly emaciated. He complained of great thirst, a moderate degree of nausea, which was very little increased by large draughts of water, which he craved continually. He was free from all pain, had no diarrhœa, but on two occasions passed black stools, which evidently contained blood in an altered state. After each vomiting he was exceedingly prostrated, but rallied somewhat under stimuli. On the night before his death he was seized with sudden contraction of the flexor muscles of the left arm, forearm, and leg, of which he was perfectly aware, and from which he appeared to suffer the pain produced by cramp. He spoke scarcely any for the last two days, but was sensible enough to sit up on the edge of his bed and urinate only a few hours before death. During his last night he had several unilateral cramp attacks, which were followed by a violent convulsion about an hour before his death, in which his whole body was affected. After this he sank very gradually, and died from exhaustion.

The *post-mortem* examination was made by Drs. Rhoads and W. Pepper, thirty-nine hours after death. The brain was not examined.

Body exceedingly emaciated. Left knee partially flexed, from an old arthritis. Cranium perfectly bald, from long-standing alopecia. Backs of the hands and fingers dark slate-coloured.

Chest.—Lungs not tuberculous; some calcareous sub-pleural deposits at apex of right lung. Left pleura adherent throughout, resulting from an attack of pleuro-pneumonia occurring about twenty years ago. Heart small, pericardium closely adherent, endocardium healthy, valves sound, and held water perfectly well; aorta not diseased.

Abdomen.—Stomach had undergone post-mortem softening, but was not diseased. It contained a large quantity of very offensive greenish matter, similar in appearance to the fluid vomited after the cessation of the hemorrhage. The duodenum presented numerous small black coagula of blood, scattered over its surface, showing the source and nature of the internal hemorrhage; the other intestines were healthy. The *liver* was enlarged, dark-coloured, exceedingly hard, and presented a somewhat fatty appearance, but not nearly so well marked as in simple fatty degeneration of that organ. The gall-bladder was very small, contracted, flaccid, and contained one or two drachms of greenish bile. The *kidneys* presented the usual appearances resulting from diabetes. They were of normal size, increased in density, and gave evidences of having been overtaxed in their secreting function. The supra-renal capsules were small and soft, with a granular texture and enlarged cavity; there were no evidences of an abnormal condition to the eye. The *spleen* was somewhat enlarged, soft, light-coloured, and anæmic; it bore no evidences of marked disease. The other abdominal organs were healthy.

Dr. Carson attended Mr. L. with pleuro-pneumonia twenty years ago. He said he was subject to rheumatism, and thought him of a strumous habit. Dr. Meigs attended him several years ago with ascites, and was amazed at his recovery, as he had, at that time, enlargement and hardness of his liver, and the slate-coloured skin, before mentioned, on his hands. He subsequently attended him for inflammation and partial anchylosis of his left knee-joint, from which he ultimately recovered with but little loss of motion.

1868. *Nov.* 26. *Large Fibroid Tumour of the Uterus; Operation for Extirpation; Discontinued in consequence of Excessive Hemorrhage; Death from Exhaustion five days after.*—Dr. MEARS presented the specimen, with the following history of the case, and description of the operation by Dr. WASHINGTON L. ATLEE:—

March 30, 1867. I visited Miss M. in company with Drs. Mitchell and Keating. Dr. M. informs me that one year ago she had a hard solid tumour in the lower central portion of the abdomen. Now, she is as large as a female at full period, pretty uniform in shape, with lines of inequality which can be both seen and felt. One line, or sulcus, forms a circle, whose area, at its upper edge, embraces the umbilicus, and two other sulci take the position and direction nearly of the two lineæ semilunares. These inequalities resemble the divisions often seen in a multilocular ovarian cyst. The tumour is elastic, non-fluctuating, and feels like a soft fibroid, or not unlike a colloid tumour. The uterus is found *in situ*, the cervix soft and natural, and the sound enters two and a half inches. Dr. Keating informs me that after having dilated the cervix with sponge tents the sound was made to enter four inches. There never has been menorrhagia, or hemorrhage.

April 3. Drs. Mitchell, Keating, and Keen being present, and the rhigoline spray having been applied, I passed a larger trocar through the linea alba into the central portion of the tumour. The tumour throughout offered great resistance to its introduction, and nothing but blood escaped through the canula. After this exploration the diagnosis was that the disease was either fibroid or colloid.

Nov. 6, 1868. I again saw Miss M. with Dr. Mitchell; she has increased very much in size since. Percussion discovers resonance only over the left lumbar region. The pelvis is almost wholly occupied by an elastic body, pushing forward the posterior vaginal wall. The uterus now is crowded out of the pelvis, and appears to be pushed forward and upward, so that the lower portion of the cervix is compressed between the pelvic portion of the tumour and the symphysis pubis, and flattened, making the os tincæ a mere slit, into which I could not penetrate with the sound.

As she is very solicitous for an operation, I requested another opportunity for an examination during a menstrual period, at which time I expected to be able to introduce the sound. Menstruation occurred November 14th, on which day the sound was passed into the cavity of the uterus to the distance of four inches towards the anterior part of the tumour, but it could not be felt through the wall of the abdomen. The tumour is now softer, and the patient says that this is usually the case during menstruation.

Operation.—November 18, 1868, the following gentlemen met me: Drs. S. Weir Mitchell, David Burpee, J. Ewing Mears, William Thompson, William Reber, U. S. Navy; and Messrs. Wilson and Landis, medical students. I announced my diagnosis to them, and distinctly expressed my doubts as to the practicability of removing the tumour. So soon as the patient was fully under the influence of the chloroform mixture, an incision about four or five inches long was made through the linea alba below the umbilicus directly down to the tumour. The tumour and walls of the abdomen were so intimately incorporated by adhesions that it was difficult to find the line of contact. Immediately, however, on cutting down upon the tumour and through its capsule, several arteries of a large size spirted out large quantities of blood. These vessels were compressed by the fingers of the assistants as well as possible, but still the bleeding continued profusely. I now broke up strong adhesions between the tumour and walls of the abdomen with my finger, carrying it up to the umbilicus, but upon withdrawing it a perfect deluge of venous blood followed. I next made a small incision into the substance of the tumour in order to examine its structure, but this also was followed by hemorrhage, one large artery jetting out its blood, and the whole cut surface rapidly throwing it out. The tumour was soft, elastic, and of a grayish colour in the interior, and seemed like a sponge saturated with blood and filled with numerous arteries. The idea of extirpation was now entirely abandoned, and the next thing was to arrest hemorrhage. For this purpose several fruitless attempts were made to take up the arteries, but in every instance the ligature failed, as the blood would immediately burst out again. The copious venous hemorrhage from the umbilical region was readily controlled by pressure upon the wall of the abdomen, but as ligation had no effect in controlling it from the cut surfaces, I resorted to acupressure pins and twisted sutures, which succeeded in arresting it. The heads of the pins were so arranged that they could be withdrawn whenever it would be safe to do so. The external wound was dressed by twisted suture and adhesive strips, and the whole secured by compress and bandage. My estimate of the loss of blood was between thirty and forty ounces, and yet the patient's pulse was pretty well sustained.

The patient died on the fifth day following the operation, from exhaustion.

Autopsy by Dr. J. Ewing Mears, November 26, 1868.—Present, Drs. Mitchell, Thompson, Reber, and Sowerby. Rigor mortis was not well marked. The body was very much emaciated; abdomen was very tense, and resonant on percussion. The surface of the thighs was discoloured, containing blebs which were full of bloody serum. The wound was gaping, only one of the sutures remaining, and the edges were in a sloughing condition. On extending the incision above, the superior border of the tumour was found three and a half inches above the umbilicus. The stomach was forced upwards and to the right. The transverse colon was very much distended. The omentum was atrophied. It contained large vessels which passed downward, and ramified over the surface of the tumour; some of these vessels contained air bubbles. The tumour was found adherent in every direction, the adhesions being very firm and requiring much force to detach them. These bands contained large vessels which ramified over, and were lost upon the surface of the tumour. Posteriorly the small intestines were adherent to the tumour, and also the descending colon on the left.

Cutting through the vagina and the uterine attachments, the tumour, with the uterus and appendages, was with much difficulty removed. Its weight was estimated to be about thirty pounds. The other organs were not examined. On examining the mass after its removal, the tumour was found to have taken its origin from the anterior surface of the uterus, about midway between the os tincæ and fundus, attached by a short pedicle, one inch in breadth, and a quarter of an inch in thickness. The uterus was retroverted, and the neck much elongated.

Just above the point of attachment of the pedicle and to the left, there was a tumour about the size of a filbert. It was hard, and on section grated under the knife, and had the appearances of scirrhus. The surface of the large tumour was smooth and regular in outline, except on the right side just above its inferior border. At this point there was a marked projection, between which and the body of the tumour were lines running over toward the middle. The tumour was soft and elastic, and section showed its interior to be very vascular, and much discoloured. Its fibroid structure was quite apparent to the eye. Microscopical examination (made by Dr. Wm. Pepper) confirmed the opinion as to its fibroid character. The small tumour was found to be fibroid, which had undergone calcareous degeneration.

Remarks.—The profuse hemorrhage which attended operative interference in this case was quite an unusual circumstance. The experience of Dr. Atlee, derived from numerous operations for the removal of fibroid growths, has convinced him that section of the capsules of the tumours immediately causes a cessation of the hemorrhage. In this case the hemorrhage was due to the rupture of the large vessels contained in the bands of adhesions. It was stated by her attending physician, Dr. S. Weir Mitchell, that she had not at any time evinced symptoms of peritoneal inflammation.

1869. *January* 28. *Gunshot Fracture of both Orbits; Immediate Total Blindness.*—Dr. PACKARD presented this specimen, which included the eyes and the bony skeleton of the face, excepting the inferior maxilla.

The patient, Wm. Brown, died of phthisis, January 27, 1869, at the Soldiers' Hospital in this city. He had been wounded at Cold Harbor, Va., in August, 1864.

The ball entered on the left side, just behind the orbit, on a level with the brow, passed through and emerged at the outer and lower margin of the right orbit, causing immediate and total blindness.

Dr. Packard remarked that an interesting question originated at the time of the post-mortem, as to the course of the ball, whether from left to right or right to left, the destructive changes in the right eye far exceeding those in the left. He however became satisfied that the greater destruction of the right eye was due to the fact that suppurative inflammation had here taken place, the left having been lost at once.

The specimens being referred to a committee for microscopic examination of the state of the optic nerve, Drs. WM. PEPPER and TYSON were appointed, and reported the following: The optic nerves, especially that of the right eye which was destroyed by suppurative inflammation, presented marked fibroid degeneration; their sheaths were much thickened, and there was an excess of fibrous tissue throughout their structure.

In places, indeed, the nerve fibrils appeared entirely wanting, and replaced by narrow bands of close lying fibres. In other places, the white matter of Schwann was still present, but highly granular.

Brain of Hydrocephalic Patient.—Dr. R. M. Townsend presented the specimen, with the following history:—

The patient, a girl, æt. 32 months, had been sick a month. Was first attacked with cataleptic convulsions, falling in the street and house while at play. At the time I first saw the child, two weeks before death, she was semi-delirious, pulse full and strong, the temperature of the body high, the bowels constipated, the pupils widely dilated. Stimulants and revulsives were ordered. During the treatment, convulsions frequently occurred, strabismus in both eyes developed itself. Digestion remained unimpaired, the bowels responded to injections, and the bladder was normal in its function. A few minutes before death the child was semi-conscious, and apparently free from pain.

Post-mortem examination.—Body much emaciated; liver enlarged and hypostatically congested. High up in the colon there was some impaction of feces. There was effusion in the pericardial sac, and the right auricle and ventricle were full of semifluid blood, with a few clots. The membranes of the brain were congested. From six to eight ounces of serum were collected at the base of the brain. The bones of the skull were all firmly united. The whole medullary and cortical substance of the brain was infiltrated with serum. The ventricles were full of the effused fluid. The convolutions of the cerebrum were flattened; the sulci shallow. The gray matter seemed thinned; more than the normal quantity of serum was present in the spinal canal.

Feb. 11. *Softening of the Spinal Cord; Rigid and Persistent Contraction of Flexors of Lower Extremities.*—Dr. W. W. Keen exhibited the brain and spinal cord, with the following history:—

Catharine Weber, æt. 32, admitted to St. Mary's Hospital July 16, 1868. Had typhoid fever in 1865, but before that time she was perfectly healthy, and there was no predominating family tendency to disease. She was sick with the fever three months, and convalesced slowly. Has been lame in the left leg ever since, and usually walked with a stick, her leg being held stiff and straight; but she was able to flex it when sitting. Severe pain was suffered also on the left side in the hip, the course of the sciatic nerve, and the ankle, at which last point there was considerable œdema. She has also had considerable leucorrhœal discharge since the fever. Just previous to the fever she was married, and had a dead fœtus at term in December, 1867, the cause of its death not being known. In February, 1868, the left leg began to contract, and this has gradually increased up to her admission. She had kept her bed for some months.

On admission the leg was completely flexed on the thigh, the heel touching the buttock, with much general wasting of the muscles of the thigh and leg. Her appetite was poor; bowels constipated; leucorrhœa whitish, and rather abundant.

On July 20, 1868, Dr. J. H. Grove, the attending surgeon, divided the ham-string tendons, and extended the leg, placing it on a double inclined plane. Good diet, beef-tea, and morphia p. r. n., with iron and quinia. The upper end of the inclined plane producing soreness and pain, extension by Dr. Buck's weight and pulley, with lateral sand-bags, was applied after five days. There was a good deal of spasmodic twitching of the muscles, producing great pain.

Aug. 1. Several bed-sores appearing, all extension had to be removed.

The bed-sores were poulticed. The points of division of the tendons had healed.

12*th*. The contraction of the leg was as bad as before, the twitchings still continuing. The uterus was touched with nitrate of silver, 40 gr. to the ounce, and a vaginal injection of zinci sulph. gr. iij to f℥j used daily, under which treatment the os uteri rapidly improved, and became almost normal. Her bed-sores also improved greatly. The internal treatment was changed to iron, belladonna, and strychnia; and electro-galvanism was ordered to the entire leg for fifteen minutes daily.

25*th*. The thigh now began to contract on the pelvis, particularly by the action of the rectus femoris. The entire leg, in addition to her other treatment, was packed in a wet sheet, but without effect.

Oct. 1. I came on duty, and saw her for the first time. The ulcers were nearly well, but her general condition was very unpromising. The leg was firmly flexed on the thigh, and could be extended only some three or four inches. In the popliteal space an ulcer existed, the result, doubtless, of pressure. The thigh was two-thirds flexed on the pelvis, especially by the rectus. Her urine was normal. Quinia and iron were continued, the belladonna and strychnia stopped, and milk-punch also ordered. Subcutaneous injections of sulphate of atropia $\frac{1}{60}$th grain were ordered twice daily in the contracted muscles, guarded with morphia. This was increased in a day or two to gr. $\frac{1}{40}$, but without effect.

9*th*. She was etherized, and an attempt made at extension, and again on the 13th. On each occasion the popliteal tissues were so contracted, both by the long-continued flexion, and also by their abnormal ulcerated condition, that they tore rather than stretched, thus giving rise to considerable hemorrhage. The attempts were abandoned, fearing hemorrhage from even the popliteal, which ran in the midst of a large ulcer, filling the entire popliteal space, exposing all the ham-string tendons, and binding firmly both artery, vein, and nerve down to the bone. The knee-joint also had strong adhesions in it. Moreover, this was treating only a local symptom, and not remedying the cause.

Soon after (Nov. 1), the bed-sores again returned, and along with her generally poor health, prohibited any attempt at operative interference, whether of extension, a redivision of the tendons, or severe counter-irritants to the spine. Diarrhœa also soon set in, and was checked with difficulty. Her general health, therefore, only was attended to. Her motor power was almost wholly normal, where not limited by the contracted muscles, and sensation was also but slightly impaired.

Early in December Duchenne's trocar was used to extract a piece of the rectus femoris, but nothing could be discovered of muscular tissue, leading thus to the belief that the apparatus had not caught any of the muscle. But a subsequent attempt by Noeggerath's instrument (see *Am. Journ. Med. Sci.*, Oct. 1869, for its description), in January, in the hands of Dr. Hargadine, the resident surgeon, when the patient was under ether, gave the same result. In January, 1869, her right leg began to contract, and soon afterwards her arms.

Feb. 7. Paralysis of the sphincter of the bladder.

9*th*. Convulsions followed by a semi-comatose condition, but not by paralysis.

10*th*. Died worn out, her condition being in no respect materially changed. Both legs were flexed post mortem, so that to extend them the hamstrings had to be divided, and also rectus psoas and iliacus.

Post-mortem, Feb. 11, 10 P. M. *Brain.*—Dura mater removable, non-adherent. General redness, not removable on pressure, over the entire pia mater especially well-marked on outer and upper anterior half of left hemisphere; at base of brain the same redness existed, but there was no difference of consistence to touch. Puncta vasculosa abnormally well marked, especially in posterior portion of each lobe.

On opening the lateral ventricles, half a drachm of cerebro-spinal fluid was found, and the vessels from the fornix forming the puncta vasculosa, just noticed, were large, numerous, and filled with blood.

Sections of corpus striatum and optic thalamus, on both sides, showed nothing abnormal, excepting some increased vascularity. Cerebellum, nothing abnormal noticed. 4th ventricle, nothing abnormal noticed.

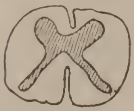
Spinal Cord.—Pons normal.

On opening the dura mater anteriorly there was more than usual vascularity, and the dura mater adhered to the arachnoid from 1st dorsal to the 6th dorsal nerve, on the left side, and to the 8th dorsal on the right, but it could be easily separated; from these points the dura mater was normal again; considerable vascularity existed throughout the entire cord. To the touch, at the origin of the roots of the 8th cervical nerve, the cord became markedly soft on both sides, this softness continuing to the lower extremity of the cord.

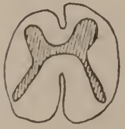
On making a transverse section of cord, at various levels, those below the point of softening showed the contents almost diffluent, especially so from the 6th dorsal to the 10th dorsal nerves; at the lumbar enlargement it was less diffluent. In all these, below the 5th cervical, the outline of the gray matter is not entirely reliable, as the contents of the cord were so nearly diffluent as to preclude any accurate drawing.

After hardening in chromic acid for two weeks, the softening in the lower part of the cord, from the 8th cervical nerve down, was very marked.

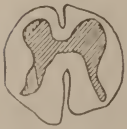
At the various points of section above noted, the appearances, as far as could be observed, were about as before; though, below the 8th cervical, the softened parts were still nearly diffluent, and no satisfactory sections could be made. Where the gray matter was in general it looked transparent, especially towards the centre.



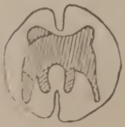
1st cervical nerve.



3d cervical nerve.



5th cervical.



8th cervical.

On microscopic examination, nearly all the arteries of both brain and spinal cord were undergoing fatty degeneration of their walls, the deposits of oil globules being most marked at their sides and bifurcations, and the muscular nuclei being very indistinct or absent, even after adding acetic acid. There were also in the softened masses large numbers of compound granular corpuscles. In the transparent parts there were large numbers of nuclei, but no growth or development of fibres; no sclerosis.

The nerve-tubes of the softened parts were narrower than usual, and in many cases were deprived wholly of myeline. These changes all affected more markedly the left side of the cord, but scarcely more the anterior than the posterior portion.

There were no corpora amylacea whatever to be seen.

The nerve-roots, both anterior and posterior, originating from the softened portion, were also wasted, and in some cases their arterial walls were fatty. Their myeline was almost gone, and they were very soft. The cylinder axes throughout appeared to be normal.

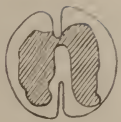
The heart was fatty, but only moderately so.

The pectoralis muscle was normal. The rectus femoris was over two-thirds fatty, and but rarely could the striæ be seen. Liver enlarged and fatty; kidneys normal.

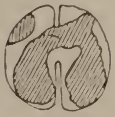
The uterine mucous membrane was congested and thickened. The colon was only five-eighths inch in diameter—smaller than the small intestine.

Unfortunately, the sciatic nerve was not obtained; but there were no evidences in the cauda equina to justify the belief that the disease had extended from the sciatic to the cord itself. I obtained none of the intestine.

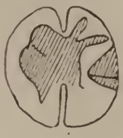
5th dorsal.



10th dorsal.



Lumbar enlargement.



For making the post-mortem examination, I must thank the Resident Physician, Dr. Hargadine.

Cystic Degeneration of the Mucous Membrane of the Stomach.—Dr. R. P. HARRIS presented the specimen with the following condensed abstract:—

Called November 11, 1868, to see a married lady, æt. 53, delicate build, nervous temperament; appearance indicative of greater age. Symptoms were flatulence, debility, loss of appetite, tendency to diarrhœa; pulse 120. Been failing in health several months. Had a tendency to dyspepsia many years. Usual beverage, black tea, boiled down two hours, made excessively strong, like a fluid extract. Had taken two cups of such preparation night and morning for many years.

Took to bed December 29th. Pulse 130, with occasional febrile attacks of slight character. Utter disgust for food; occasional vomiting; almost constant nausea; partook of scarcely any food; sustained by enemata. As she never took any milk, cream, or egg diet, or liquid preparations of meat when in health, and could retain but little by the rectum, it became impossible to nourish her sufficiently. Position uninterruptedly on the back, with heels drawn close to buttocks. Could give no reason for form of decubitus; had no abdominal pain, distension, or uneasiness. Percussion and palpation revealed nothing abnormal. Chest sounds—both pulmonary and cardiac—were normal, except as to frequency of action. Pulse gradually reached 170, and ranged from 150 to 170 for four weeks prior to death. Was in articulo mortis for two and a half days, with pulse from 180 to 250. Never had any headache; mind clear until near death. Died Feb. 9, 1869.

The chief value of the case is its bearing upon the diagnosis of diseases of the abdomen. Cancer of the uterus exists in one sister. Tubercle has not affected any member of the family. Some of the symptoms were indicative of the former disease, others, of the latter; but the absence of pain in the one case, and persistent diarrhœa, or pulmonary trouble in the other, made the existence of either malady extremely doubtful.

Autopsy twenty hours after death.—Body much emaciated. Head not examined. Lungs presented lobar emphysema of upper lobes, with slight adhesion of left apex; organs otherwise healthy. Heart very small, and covered with fat. Left auricle so thin as to become perforated in its eversion from the pericardium. Right cavities very thin; muscular tissue of right ventricle very fatty. Wall of the left ventricle comparatively very thick and firm. Coronary arteries healthy. Heart contained firm, white, ante-mortem clots. Tricuspid mitral valves slightly thickened on free borders. Pulmonary valves very large and very thin; one perforated near insertion. Aortic valves healthy. Small atheromatous patches in aorta. *Liver* light in colour, dense and fatty. Gall-bladder very small, and free from gall-stones. *Kidneys* also fatty, soft, and flabby. *Spleen* very small, but not diseased. *Stomach* of fair size, contained dark grumous fluid. Mucous membrane congested, in places ecchymosed, rather thin, and presented an infinite number of minute, roundish elevations, somewhat like minute vesicles.

On microscopic examination, marked fatty degeneration of the epithelium of the mucous membrane and gastric tubules was noticed. The little round bodies were seen to be cysts imbedded in mucous membrane of varying size, with thin fibrous walls, and lined by a layer of nucleated epithelium.

Pancreas.—Cells moderately fatty, but a great many still preserved nuclei. *Ovaries* atrophied. *Uterus* very small, but in no way diseased. *Mesenteric glands* not diseased. *Intestines.*—Exterior aspect normal. Peritoneum healthy. Intestinal lining not examined microscopically.

Feb. 25. Primary Cancer of the Head of the Pancreas, undergoing Softening.—Dr. S. W. GROSS exhibited the specimen, and read the following history of the case:—

Mrs. ——, 50 years of age, married, and the mother of two children, became affected early last spring with symptoms of dyspepsia and neuralgia of the abdomen, followed by gradual loss of appetite and failure of strength. Experiencing no improvement, she was induced in June to go to the sea-shore, but, after remaining for about a month, she became so unwell and depressed in spirits that she determined to return to the city. During the hot weather she suffered greatly from prostration, with a general aggravation of her other symptoms. When Professor Gross first saw her on the 25th of November, she had been confined for a number of weeks to her couch, and was hardly able to walk without support across the room. The countenance was quite pallid, the extremities were cold, the sleep was interrupted and unrefreshing, and there was great flatulence with acid eructations, absence of appetite, constipation of the bowels, and neuralgic pain in the region of the stomach and liver. Considerable nausea was also, at times, complained of, and, now and then, there was a slight attack of vomiting. No tumour could be perceived in the abdomen, which was, however, generally somewhat tender on pressure, especially in the epigastric region towards the right side. The pulse was usually, without material variation, from 92 to 100 in the minute. Under the use of subnitrate of bismuth and tincture of iron and quinia, with an occasional dose of blue pill, rapid improvement occurred; the flatulence, pain and nausea soon disappeared, the appetite and sleep increased, and the case assumed a more promising aspect.

Early in January, the suffering again returned, the pain became excessive, and there were also occasional attacks of vomiting, generally most severe in the evening. The bowels were obstinately constipated. A tumour was now detected on the right side of the abdomen between the umbilicus and the liver, small, indistinctly circumscribed, hard, and in-compressible. Professor Gross was doubtful as to its true character. It seemed as if it might be scirrhus of the mesenteric glands, or of the omentum. It was evident that it was not connected with the liver or the stomach.

The most prominent symptoms from this time on were steady, progressive emaciation, obstinate constipation, want of appetite, and occasional nausea after eating, with, now and then, perhaps once in a fortnight, vomiting of ingesta and mucus. The neuralgic pain was, at times, distressing, but much less generally than in the earlier periods of the disease. Death occurred on the 17th of February, from sheer exhaustion. For the last seven weeks she took no medicine, excepting, every evening, twenty-five drops, gradually increased to thirty, of Battley's sedative, which seemed to agree with her better than anything else. Beef essence, milk punch, and brandy toddy constituted the principal articles of diet.

Autopsy confined to the abdomen. The body was greatly emaciated. On opening the abdomen the stomach was seen to be enormously distended and displaced to the left side, in such a manner that the lesser curvature was parallel with the median line, the greater end being in the left hypochondrium, and the pyloric extremity in the hypogastrium. It contained about two quarts of a dirty fluid, and near the pylorus there was some ulceration of the simple follicles. Intimately attached to the pylorus, and contained within the concavity of the duodenum, to which it was also adherent, was the enlarged head of the pancreas. In endeavouring to separate its attachments, the fingers passed into its interior, making the irregular cavity shown in the specimen, from which issued typical cancer juice. The head of the organ was much enlarged, lobulated, and of very firm consistence, while the lesser pancreas was in the same condition. The body and tail of the gland were not involved. The lumbar lymphatic glands in front of the aorta and on the sides of the vertebræ were secondarily affected, the greater number being hard, while a mass, of the size of a pullet's egg, seated on the left side of the spinal column, was broken down into a creamy fluid. The liver was normal, but the gall-bladder was about two-thirds distended with thick, inky bile, and adherent to the duodenum. The remaining viscera were healthy. Owing to some difficulties attending the inspection, the condition of the pancreatic and common choledoch ducts could not be ascertained, but, during life, there had been neither jaundice nor fatty stools.

A microscopical examination showed that the mass was of a scirrhous nature. The creamy juice exhibited large, distinct, nucleated cells, the majority of which were polynucleated. They were, for the most part, oval or round, but occasionally clubbed, and there were evidences of their passing into the encephaloid type.

Microscopic examination. By Dr. WM. PEPPER.—The disease was limited to head of the organ, which was involved over a space of about 2 inches. This part of the gland had been converted into a firm encephaloid mass, the central part of which had undergone softening, leaving a cavity with very irregular walls, formed of cancerous matter. The exterior of the diseased mass was nodulated and very hard, the nodules presenting on section a dense structure of whitish colour interspersed with pinkish patches, and exuding on pressure a small amount of thick whitish cancer-juice. Microscopic examination of the firmer portions showed an abundant fibrous stroma, with very numerous cells, usually of large size, oval or caudate, and containing one, two, or three large, clear, oval, nucleolated nuclei. Even in these portions there was a great deal of free fat, in form of small drops, but in the juice obtained by scraping the walls of the softened parts, there was not only a very great amount of free oil, but the cells were, in most instances, filled with it, and numerous granule cells were present.

The remainder of the gland was rather small; there was no dilatation of its ducts, and its structure presented an increase of interstitial fibrous tissue with marked fatty degeneration of the true glandular portion.

Dr. W. Pepper remarked, that he was not particular in regard to the name to be given to the form of cancer found in this organ. He had applied the term encephaloid, because, although its stroma was abundant and well developed, it was not arranged in loculi, but presented caudate cells thickly interspersed throughout its structure. The cellular elements also seemed more abundant than in cases of typical scirrhus.

Dr. Pepper also remarked, that there are one or two points of clinical interest in connection with the report of Dr. DaCosta, made to the Society in 1858, which included all the cases of cancer of the pancreas published up to its date, quoting, also, certain tabulated cases not published in detail. Jaundice, abdominal tumour and pain in the epigastrium or back, were the most frequent symptoms met with. In the present case, although the two latter symptoms were present, jaundice was entirely wanting.

No cases of cancer of the pancreas occur in our proceedings, since that on which the report of Dr. DaCosta was based. Hence he moved that a committee of three be appointed to collect the cases placed on record since the publication of Dr. DaCosta's paper.

The chair appointed Dr. Wm. Pepper, Dr. Gross, and Dr. Hare.

Report of Committee on Cancer of Pancreas.—The Committee appointed to collect the cases of cancer of pancreas, published since the year 1856, and to report them in such a form as to complete the report of Dr. DaCosta on this subject, published in the Transactions of this Society, vol. i. p. 109, submit the following:—

They had examined most of the medical journals, German, French, English and American, from 1850 to 1869 inclusive, and a special work on diseases of the liver and pancreas, published by Fauconneau-Dufresne, in 1856,[1] and had thus collected a considerable number of cases, when they obtained access, through the courtesy of Dr. DaCosta, to a small work upon the diseases of the pancreas, published by Ancelet in 1866.[2]

In the article devoted to cancer of the pancreas in this work (pp. 53—122), which is by far the most full and complete which has yet appeared on the subject, there are 200 cases quoted with more or less detailed account of symptoms and morbid anatomy, and carefully analyzed with regard to every point of importance.

They have been able to identify nineteen of the thirty-seven cases tabulated by Dr. DaCosta, with the corresponding cases in Ancelet's tables. The remaining eighteen cases (which, with two exceptions, were derived from American or English sources) cannot however be recognized.

It happens, however, that in very many of Ancelet's cases, no reference whatever is given, and the record is so brief that it scarcely serves to give the case a sufficiently marked individuality to render it distinguishable from others; so that your Committee can only surmise that the above eighteen cases are not included in Ancelet's tables, and with the more probability, because with singular oversight, Ancelet does not give a single reference which shows that he was acquainted with the valuable report of Dr. DaCosta. The same uncertainty exists in regard to many of the cases which have been published subsequently to 1856. So that your Committee could feel no confidence, in transcribing them, that they do not figure in his calculations.

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[1] Précis des Maladies du Foie et du Pancréas, par V. A. Fauconneau-Dufresne. Paris, 1856

[2] Études sur les Maladies du Pancréas, par Doct. E. Ancelet, Paris, 1866.

They have found themselves therefore limited to the cases which have appeared between 1866 and the present date, the number of which is so extremely small that any deductions drawn from them could have no authority when placed in comparison with those drawn up by Ancelet from 200, or by DaCosta from 37 cases.

Your Committee therefore content themselves with calling the attention of the Society to this work of Ancelet, which contains most valuable information on the various disease of the pancreas, and request the Society to relieve them from the further consideration of the subject.

WILLIAM PEPPER, S. W. GROSS, H. B. HARE, *Committee.*

March 11. *Diaphragmatic Hernia Displacing the Heart; Death from Uræmia consequent on Granular Degeneration of the Kidneys.*—Dr. AUGUST F. MÜLLER presented the specimen, with the following history:—

T. H. W., machinist, æt. 48, born in England, was admitted into the German Hospital, September 30th, 1868. Owing to the mental condition of patient, it was extremely difficult to obtain reliable statements, but three years since he met with heavy pecuniary losses, which depressed him very much. He states that he suffered no bodily ailment. The death of his wife, seven months before admission, but added to his troubles. He had been feeling vaguely unwell for two months previous to her death, soon after which event he conceived the idea that his business was going to ruin, and terminated it. It would seem from his incoherent answers that two months before admission there had been a change for the worse, for if asked if he had suffered pain, he replies, "Two months ago." He had been able to move about until two or three weeks previous to death, but had been losing strength for several months. When admitted he was able to walk with assistance. His face was without expression; he was pale, and had almost complete anorexia. Pulse very feeble, 84; respiration hurried and shallow, 60 in the minute; heart-sounds distant and feeble, but both distinct. Had frequent slight attacks of dyspnœa, especially when lying down; tongue slightly coated with a white fur; legs œdematous to knees; frequent desire to urinate; bowels regular. During night after admission was very restless; was up many times; would walk about the room for a few minutes, then lie down for a short time, again to start up and pace the floor. Passed about six ounces of pale urine, sp. gr. 1012, containing abundance of albumen and chlorides; acid reaction. Tube-casts, epithelial and granular, were also present in abundance. Patient continued in about the same condition till October 8th, when he had a convulsion, after which he fell into a semi-comatose condition, which became complete coma on the 14th. He died Oct. 16th, death being preceded by involuntary discharges.

Post-mortem.—*Lungs* intensely congested. *Heart*—no pericardial effusion. In the left ventricle, attached to the apex, was found an oval, fibrinous mass, attached by a pedicle to the muscular structure, the interior in a state of softening; it measured 1½ by 2 inches. Valves opaque, without deposit; ventricular walls 1¼ inches in thickness. Right side normal. *Liver* highly nutmeg, with beginning cirrhosis at anterior lower border of right lobe. *Spleen* very much congested; about normal in size. *Kidneys* atrophied, presenting granular degeneration. Tubular substance almost entirely obliterated, except the two lower pyramids, which were quite distinct. The *diaphragm* was the seat of a hernia, the sac of which contained a large knuckle of colon, displacing the heart by pushing it fully three inches back from the thoracic walls; thus accounting for the faintness and distance of the heart-sounds during life.

Dr. W. PEPPER desired to learn of gentlemen who had, in their surgical experience, met with similar cases, whether this accident has occurred as the result purely of a violent straining effort, or whether there is not usually, as appears to have been the case here, degeneration of the muscular tissue of the diaphragm.

Dr. ASHHURST said that diaphragmatic hernia was such a rare lesion, that few surgeons met with it. There was, however, a fact (not universally admitted) in connection with hernia, which might throw some light upon the subject of Dr. Pepper's question. This was, that in almost all, if not in all cases of hernia, there was a positive elongation and relaxation of the peritoneal investment which held the gut in position, a condition which amply accounted for the frequent failure of operations for the so-called "radical cure" of hernia Dr. Ashhurst had no doubt that there was in this case a relaxed condition of the meso-colon, which permitted the gut to escape through the diaphragmatic aperture—relaxation which might not improbably be accompanied by degeneration of other tissues, as suggested by Dr. Pepper.

March 25. *Cerebral Hemorrhage of Left Anterior Lobe, Left Crus Cerebri and Pons; Marked Degeneration of Arteries, with Numerous Minute Miliary Aneurisms, and Circumscribed Hemorrhages into the Perivascular Sheaths.*—Dr. WILLIAM PEPPER, in presenting these specimens, gave a brief account of the case, with a description of the lesions:—

I——, a coloured sailor, æt. 35, was admitted to the Pennsylvania Hospital in a state of profound coma. The only history obtainable was that he had fallen insensible about seven hours previously. Death ensued twenty-seven hours after admission.

Autopsy—Brain alone carefully examined.—The right hemisphere was apparently healthy on superficial inspection, but microscopic examination showed marked fatty degeneration of the minute arteries, the fat granules being accumulated especially in the perivascular canals. In the left hemisphere an extensive effusion of blood was found involving the posterior part of the anterior lobe, the greater portion of the corpus striatum, and the white substance external to this body. The wall of the left lateral ventricle was ruptured, and this cavity filled with partly coagulated blood. There was no extensive softening of brain-tissue in neighbourhood of the clot, but in many places the layer of tissue immediately surrounding the cavity presented capillary apoplexy. There was also an apoplectic clot in the left crus cerebri and the left side of the pons. The coats of the arterioles in the neighbourhood of the clots presented an extreme degree of degeneration. The perivascular sheaths were enlarged, contained numerous round granular corpuscles, and large collections of fat globules, and presented great irregularity of outline, in places forming large bulgings. The true arterial coats presented comparatively little fatty degeneration, but the transverse muscular layer was very imperfectly marked. Upon washing out the clot from the cavity by a gentle stream of water, numerous little bloody masses were found attached to the walls. Three of these presented a remarkably regular outline, and, on closer examination, were found to present an envelope of fibro-cellular tissue, which was distended by the clotted blood. These bodies were oval or pyriform in shape, from one-tenth to one-sixth of an inch in diameter, were attached each to the end of an arteriole, and were evidently caused by rupture of the arterial coats and effusion of blood into the perivascular sheath of the vessel, which was thus distended into an aneurismal form.

Careful examination was made of the walls and surrounding brain-tissue for minute miliary aneurisms, but none could be detected until after the brain-tissue had become softened and decomposed from prolonged maceration in water, when quite a number of aneurisms were found attached to minute arterioles, either in or near the walls of the apoplectic cavity. These aneurisms were of two kinds: 1st, fusiform dilatations occurring in the continuity of a vessel which retained its normal size both before and after the dilatation; and, 2d, small oval or round saccular aneurisms, occurring at the extremity of a very delicate vascular branch. The fusiform dilatations averaged three-tenths of an inch in length by one-tenth in transverse diameter. Their walls were, in some cases, formed by all the arterial coats, though, in most instances, it seemed that a rupture of the coats had occurred, and the blood had escaped between the external coat and the perivascular sheath. The conical, tapering clot, which formed within the perivascular sheath above and below the seat of rupture, presented numerous crystals of hæmatoidin. The oval or spherical terminal aneurisms were very much smaller, some of them being one-twentieth of an inch wide by one-tenth of an inch in length, and were attached to delicate arterioles one-sixtieth of an inch in diameter. In one or two instances the walls of the artery could be traced for a certain distance, after which the external connective tissue sheath was the only coat distinguishable as investing the aneurism; but more frequently, partial ruptures seemed to have occurred, and the aneurism was so obscured by adhering clot that it was impossible to accurately trace its walls. The entire number of these miliary aneurisms found was about twelve; they were all in the immediate neighbourhood of the seat of hemorrhage, and no such appearances were found in any other part of the brain. The large arteries at base of brain were quite healthy.

It is a matter of the utmost interest and satisfaction to observe that minute anatomical research is gradually affording a clear explanation of the profuse hemorrhages in various organs for which such vague causes have been, from time immemorial, assigned. In a very recent article,[1] V. Rasmussen, of Copenhagen, has described an aneurismal condition of branches of the pulmonary artery which he has detected in the walls of tuberculous cavities in the lungs in cases of fatal hæmoptysis. The present communication is a confirmation of the observation recorded by Heschl of Gratz, by Bouchard,[2] and, more recently, in a very elaborate series of papers by Charcot and Bouchard.[3] In a series of 87 cases of

[1] Translated in Edinburgh Med. Journal, 1868, vol. xiv. pp. 385.

[2] La Pathogénie des Hémorrhagies Cérébrales. Paris, 1867.

[3] Archives de Physiologie Normale et Pathologique, Jan., Feb. and Oct. 1868; also Amer. Journ. of Med. Sci., Jan. 1869, p. 242.

cerebral hemorrhage, these observers detected miliary aneurisms, such as are above described, in every one without exception ; whereas the various other lesions, as atheroma of the cerebral arteries, hypertrophy of heart, granular degeneration of kidney, which have been supposed to favour, directly or indirectly, the occurrence of cerebral hemorrhage, were found only in 75, 36, and 33 per cent. of the cases respectively. MM. Charcot and Bouchard have felt themselves authorized, therefore, to claim that these miliary aneurisms of the arterioles of the brain should be regarded as the constant and invariable cause of cerebral hemorrhage. In England their observations have been confirmed by Dr. H. Charlton Bastian,[1] who detected these aneurisms in two cases; but, so far as I am aware, this is the first time they have been detected in America.

The condition of the arterial walls which attends the formation of these aneurisms is described by Charcot and Bouchard, as a result of periarteritis, under the name Sclerosis: the perivascular sheaths being thickened and presenting an exaggerated formation of nuclei; the external coat, or tunica adventitia, of the artery thickened and fibrous; and the muscular coat atrophied. In the present case, it will be observed that, though the muscular coat was atrophied and the perivascular sheath thickened and presenting an increased number of nucleated cells, there was a most important additional element in the presence of extensive accumulation of fat in the perivascular sheaths, and which to a certain extent involved the external coats of the artery. A further peculiarity, which was also present in Bastian's cases, and which was unquestionably due to this degenerated condition of the arterial coats, was the occurrence of several so-called "dissecting aneurisms of the cerebral arteries," which do not, however, merit the title, as they are in reality formed by the rupture of all the coats of the artery and the escape of blood between the external or adventitious coat and the perivascular sheath. The effused blood distends this sheath for a variable distance along the artery above and below the seat of rupture, separating it most widely from the vessel at the point of rupture, and forming a tapering conical clot above and below this place. The artery thus presents externally the appearance of a fusiform dilatation, as before described.

The complete limitation of the aneurisms to the immediate neighborhood of the clots is also noteworthy, for although other portions of the brain were examined in precisely the same manner, none were discovered in them.

March 11. *Elephantiasis Arabum.*—Dr. T. H. ANDREWS presented the specimen with the following history:—

Miss M., æt. 30, seventeen years ago was stung on the affected leg by some insect; from that period dates the enlargement.

At times, as the disease advanced, it would seem to spread from the leg to the body, accompanied with an erysipelatous blush, nausea, vomitig, &c. General health was good, although gradually declining. The patient never lost complete use of the limb, walking two miles upon it one week before death. Death was preceded by hectic. The sound leg was as preternaturally small as the diseased one was large.

Dr. ASHHURST remarked that although this was the first specimen of Elephantiasis Arabum which had been exhibited to the Society, he had himself, some years since, exhibited a specimen of greatly enlarged cervical and bronchial glands, from the body of a patient whose chest and abdomen were the seat of several broad bands of indurated tissue, which presented the appearance characteristic of what is now designated as sclerema or scleroderma. (*Am. Journ. Med. Sci.*, Jan. 1865, pp. 128–129.) The resemblance between the structural appearances of these patches or bands and those of Elephantiasis Arabum was commented upon at that time both by himself and by Dr. Henry Hartshorne, the latter gentleman indeed expressing the opinion that the disease known as elephantiasis of the Arabs was intimately connected with, if not dependent on, a morbid condition of the lymphatic system. Since that period, Feb. 24, 1864, the whole subject had been worked up much more thoroughly than it had been previously, and Dr. Ashhurst believed that the views then entertained by Dr. Hartshorne and himself as to the connection between sclerema and elephantiasis, were those now generally adopted by pathologists. The subject being referred to a committee, the President appointed Drs. Wm. Pepper and Andrews, who reported, May 27, as follows:—

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[1] Trans. Path. Soc. of London, vol. xviii., 1867, p. 75.

Report.—Your Committee to whom the specimen of Elephantiasis Arabum, presented by Dr. T. H. Andrews, March 11, 1869, was referred, would report: That through the kindness of Dr. C. R. Wiley, of Vineland, N. J., under whose care the patient was, they have obtained the following clinical history of the case. The specimen was removed after death from the body of a lady, æt. 30 years, who was a native of New Jersey, and had resided near Vineland in that State. The affection began, at the age of 13 years, with acute inflammation of the foot and lower part of the limb, and was supposed to be due to the sting of an insect, inflicted while the child was walking through a cornfield. The inflammation continued for some time with occasional quite severe attacks of pain, but subsequently subsided, leaving merely tumefaction of the limb, which continued until her death, gradually acquiring the characteristic features of elephantiasis arabum.

The patient was, it was thought, scrofulous, though her parents are living and healthy at very advanced age; she suffered with dry cough, and in her general appearance resembled a consumptive subject, but still appears to have enjoyed fair health until the age of 24 years. She suffered from repeated attacks of bilious colic, lasting several days each time; and at times the leg was so painful that she was unable to use it. Usually, however, she was very active, and one week before her death walked a distance of 1½ miles. She was married and had three children, all of whom are healthy.

Under treatment, both constitutional and local symptoms seemed temporarily palliated. No complete autopsy was made.

The specimen obtained consisted of left leg, which had been removed after death. The foot and entire leg were involved, and enormously enlarged, measuring—

Circumference of foot around instep, ...	12 inches
" leg at ankle, ...	20 "
" leg around calf, ...	23 "
" thigh at point of removal (4 in. above knee)	22 "

The skin was discoloured, and presented innumerable fine wrinkles; along the inner side of the calf these wrinkles were larger, deeper and wider, giving to the surface a coarsely lobulated appearance. There was a marked constriction at the knee and ankle, forming at the latter point a depression 1½ inches in depth; the tissues above and below this constriction lay in close apposition, and the skin had assumed somewhat the character of mucous membrane, and was coated with a thick, ill-smelling smegma. The constriction at the ankle extended obliquely upwards and forwards from internal malleolus, growing rapidly more shallow to the front of the leg about four inches above the ankle joint. There were also two other deep constrictions, which, beginning respectively at the junction of the upper and middle, and lower and middle thirds of calf, ran forwards on the inside of the leg to converge at a point corresponding to the spine of tibia midway between ankle and knee.

There was no ulceration of the surface. The tissue over the instep was very much indurated, and there was a very prominent pad-like mass of tissue above ankle which was hard, and presented a nodulated surface; elsewhere, and especially on outer surface of leg, the tissue was more lax.

At the point of amputation, the femur appeared quite healthy; the periosteum was also healthy. The derm formed a dense layer at this point about one-sixth of an inch thick, of grayish-white colour; and was succeeded by a layer 1½ inches thick, of subcutaneous fat, intersected by strong white bands and planes of fibrous tissue which inclosed islets of adipose tissue. The dense derm merged gradually into this subcutaneous layer.

Over the leg, epidermis appeared of normal thickness, but on making section through calf, a layer 4½ inches in thickness was discovered between epidermis and deep fascia of leg consisting of the subcutaneous tissue enormously hypertrophied and presenting a succulent rather lax structure of grayish colour, but interspersed with small round islets of fat, and intersected also with white bands of fibrous tissue. This subcutaneous tissue gave exit to a moderate amount of fluid of a clear serous character. The tissue of the derm was examined in the calf where the thickening was extreme, by making thin sections, and slightly teasing out the tissues in glycerine and acetic acid. Under low power it appears as a rather close network of connective tissue and abundant yellow elastic tissue in large coarse branching fibres. There were also some broad bands of dense fibrous tissue. Under a higher power (350 diameters) numerous oval nuclei were seen in the meshes of the connective tissue.

Nerves.—Sciatic nerve at point of amputation was quite healthy, without any excess of fibrous tissue. Very few nerve fibres could be detected in the derm, but those which were seen appeared normal.

Vessels.—The femoral artery at point of amputation was quite healthy. The vessels in the derm in the thigh, where but a moderate degree of thickening existed, were comparatively few in number, and showed positive, though not extreme thickening of their adventitious sheaths with accumulation of round, singly nucleated cells (lymphoid elements). These cells were evidently accumulated especially along the track of the vessels, though they did not entirely conceal their true coats.

In the derm and subcutaneous tissue of calf the coats of the vessels were obscured by the formation around them of large numbers of similar round, delicately granular, singly nucleated cells. These cells appeared to originate in the perivascular sheaths, which became widened and filled with them. In some instances the cells did not seem restricted by the perivascular sheath, but appeared as accumulations along their outside. This change affected especially the minute arterioles, whilst the capilladries remained comparatively healthy—showing merely an increase number of nuclei in their walls.

The vessels in muscles of calf also showed a less degree of thickening of perivascular sheaths, with marked multiplication of oval nuclei of adventitia. The lymphatic glands were apparently not enlarged.

Muscle.—The muscles in thigh were of normal size, and on microscopic examination presented healthy appearance; in those in the calf a majority of the fibrils were quite normal, but in some the transverse striation was faint or quite lost; some of the fibrils also had an appearance of longitudinal striation, mainly due to thickening of the sarcolemma, since acetic acid removed it and disclosed the normal transverse striation in most instances; though a few fibrils still retained this fibrous appearance.

The rare specimen thus described presents all the characteristic appearances of elephantiasis arabum. The disease was more strictly limited to the derm and subcutaneous tissue than is perhaps usual when the affection has lasted so long, and attained such extreme development. Thus the epidermis was quite healthy; the intermuscular planes of connective tissue not thickened, and none of the deeper tissues, the muscles, periosteum, or bones materially affected. It is due to this immunity that the patient retained the power of locomotion until the latest period of the disease. There was a marked absence of the discharge of milky or serous fluid from the limb, which occurs in a certain number of cases; and, so far as known, there was no implication of the lymphatic glands.

The clinical history of the case is somewhat brief, but in this report no reference will be made to the many interesting clinical questions which arise in connection with the study of elephantiasis and some apparently kindred affections, as, in particular, sclerema.

It is evident, however, from the initial attack of erysipeloid inflammation of the affected part, from the peculiar acute swelling of the limb, and from the subsequent severe attacks of pain that this case belongs to the most frequent variety of elephantiasis arabum; the other or "apyrexial" form described by Duchassaing,[1] being much more rare.

In considering the changes which occur in the affected part during the course of the disease, there are manifestly two stages: the first more or less acute, in which there is rapid swelling, due partly to serous infiltration and partly to the proliferation of some of the cellular elements of the derm and subcutaneous tissue; and a subsequent one in which these newly-formed cells slowly became developed into fibro-cellular tissue, leading either to enormous hypertrophy of the part, as in Barbadoes leg, or to contraction and induration, as in the atrophic form of elephantiasis arabum, and in sclerema, which is in all probability a kindred disease.

It is necessary therefore in order to gain accurate ideas of the seat and nature of this morbid process, that the precise character and seat of this swelling should be determined. Virchow, to whom we are indebted for the first accurate studies of the histology of elephantiasis, styles this swelling "lymphatic œdema," and attributes it to proliferation of the cells of connective tissue and to distension of the lymphatic vessels which are obstructed owing to the hyperplasia of the lymphatic glands. He also states that there is thickening of the epithelium of the smaller lymphatic ducts. According to his view the œdema is merely a secondary occurrence, and the essential point in the disease is the formation of connective tissue.

In a highly interesting paper on "Sclerodermia and its Relations to

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[1] Études sur l'Éléphantiasis des Arabes. Archives Gén., 1854, pp. 412.

Elephantiasis Arabum,"[1] Rasmussen first referred the essential seat of the morbid process to the adventitious sheaths of the smaller vessels. In two well-marked specimens of Barbadoes leg, this distinguished pathologist observed "a moderate prolongation of the papillæ, a copious deposition of pigment in the rete, and a great condensation and increase of volume of the corium; the fasciculi of subcutaneous connective tissue were greatly increased and decussating, but so that remains of fat-cells were still demonstrable in many places; but what there especially and immediately caught the eye, was an exceedingly abundant development of lymphoid cells, forming sheaths around all vessels." These, lymphoid sheaths were of considerable width in places, and presented, on their periphery, a belt of elongated cells, and exterior to this a more or less broad belt of fibrillar connective tissue. "Everywhere the thickness of the lymphoid sheaths of the vessels was in inverse proportion to the formation of connective tissue, and in the highest development of the latter they disappeared completely, so that it was quite evident that the lymphoid cells in these sheaths were the matrix of the entire formation of connective tissue."

There can be no doubt from the peculiar infiltration of the tissues ("lymphatic œdema"), and from the discharge of large quantities of fluid possessing all the properties of lymph as has been observed in a certain number of cases (Pachydermia Lactiflua of Fuchs), that there is both an excessive formation of lymph in the affected part, and an obstruction to its free passage into the lymphatic trunks.

It is of course, therefore, evident that this observation of Rasmussen is a strong corroboration of the view of Brücke, Leydig, Robin, and His, that the true starting point of the lymphatics is in the perivascular sheaths and adventitia of the small bloodvessels.

In the case which forms the basis of this report, the morbid process had advanced to a very high degree, so that it appeared that the transformation of the early formed lymphatic cells into fibro-cellular tissue was to a great extent completed. It was, however, easily demonstrable that the vessels of the derm and subcutaneous tissue presented in a marked degree the proliferation of cells in their perivascular sheaths and adventitia, as observed by Rasmussen.

It did not appear, however, as though the hyperplastic process were strictly limited to the coats of the vessels, since there also seemed to be marked increase of the subcutaneous connective tissue in points where no vessels could possibly be traced. This was especially seen in the groups of oval nuclei which were found in the meshes of the dense connective tissue of the deeper layers of the derm.

WILLIAM PEPPER, } Committee.
THOMAS H. ANDREWS, }

March 25. *Dysentery; Abscess of Liver.*—Dr. DE F. WILLARD presented the specimen for Dr. Hough, and gave the following history:—

W. E., æt. 32; sailor; intemperate; single; admitted to Philadelphia Hospital, March 3, 1869. No previous history could be obtained except that he had just returned from a voyage to the West Indies, but it could not be ascertained whether he had ever resided in the warm countries.

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[1] Hospitals-Tidende, May and June, 1867. Translated by W. D. Moore, M. D., in Edinburgh Med. Journ., vol. xiii., pt. i. 1867, pp. 200 and 318.

When first seen, the patient was dull and stupid, complaining of pain, sharp and lancinating, on left side of thorax, about the 8th rib, which was treated by dry cups for pleurisy, which he evidently had contracted from cōld and exposure. He complained of no pain in hepatic region.

On the next day, typhoid symptoms began to make their appearance, the tongue became dry and foul, the pulse frequent and feeble, and the stools frequent, while the abdomen was painful under pressure.

He soon became delirious, and continued thus until near his death, the type being low and muttering. The stools were passed eight or ten times per day, sometimes tinged with blood, sometimes apparently containing a small amount of pus. No account given by patient of any previous intestinal trouble. There was still no pain or marked tenderness over the hepatic region, although the border of the liver could be felt extending just below the margin of the ribs, and there was nothing to point especially to disease of that organ. The whole abdomen, however, was remarkably tender and painful, scarcely even permitting the weight of cold cloths. Taking these symptoms, and having no history of the intestinal disease which was discovered after the post-mortem examination, the diagnosis of typhoid fever was made, although there were no rose-coloured spots. (There had been epistaxis upon several occasions).

This was his condition on Friday the 19th, when the skin and conjunctiva became slightly jaundiced, which slowly increased, until his death on Sunday the 21st, but was never very marked.

Autopsy, thirty-six hours after death.—Skin and conjunctiva still slightly jaundiced. The marks of the cups upon the body are large, black ecchymoses, showing a vitiated condition of the blood. The walls of the abdomen have already undergone marked decomposition. On opening the cavity of abdomen, there was but small amount of effusion, and slight signs of general peritonitis. On attempting to remove the liver, a quantity of greenish pus escaped into the peritoneal cavity, and upon removing the organ from the body, both lobes were found to be the seat of extensive "metastatic abscesses," five or six in number, the largest containing several ounces of pus. They were all filled with thick greenish-yellow pus, mixed with bile, and very fetid, and the tissue about them was rapidly breaking down.

Upon searching for the cause of these huge abscesses, the rectum and the greater portion of the large intestine, showed that the patient had suffered from dysentery of apparently long standing, as the whole tract was the seat of large and extensive ulcerations extending through the mucous membrane to the muscular coat, the walls were greatly thickened and in some portions of the rectum it seemed that almost the entire mucous membrane was eroded. The surface of these ulcers was covered with thick fetid pus in many places, thus showing abundant cause for the hepatic abscesses.

Under the microscope, the contents of these abscesses of the liver showed an abundance of pus corpuscles, and broken-down granular material. Portions of the intermediate hepatic structure were apparently nearly normal, showing well-marked liver cells, but all the parts in proximity to the abscesses were commencing to disintegrate. Contents of abscesses also showed plainly the presence of bile by usual tests. Spleen covered with thick layer of organized lymph, binding it firmly to peritoneum. Structure normal; small intestine apparently healthy, stomach also. Brain and contents of thorax not examined.

Dr. **Wm. Pepper** remarked that there was usually an essential identity between the symptoms and post-mortem appearances of such cases as these, and cases of pyæmia occurring after surgical injuries. There was one point, however, in regard to which he would ask the experience of the members of the Society, viz: Whether they had ever met with metastatic abscesses following dysentery, in any organ more distant from the seat of the disease than the liver, which is of course the first organ which any septic substances from the intestine reach. He stated that he was not aware that records of any such cases existed.

It is very well known that in pyæmia, the metastatic deposits do not follow the line of the circulation; since in injuries of the leg, for example, they are often found not only in the lungs, but in the spleen, liver, and kidneys. It is evident, therefore, that whatever the septic principle which causes their formation may be, it must be capable of passing through the very fine capillary network of the lungs to reach the left side of the heart. On this account principally, therefore, it is evident that Virchow's theory of thrombosis and embolism must be but a partial one, and it must be admitted that the cause of the "metastatic abscesses," must, in some cases at least, be a septic fluid capable of inducing capillary stasis. If, however, it be true that the metastatic abscesses following dysentery are limited to the liver, it would appear to indicate that these cases were rather to be attributed to embolism.

Dr. **Geo. Pepper** stated that he had reported some time ago to the Society, a case of enormous abscess of the liver in a privy cleaner, constantly exposed to the foul inhalations peculiar to his occupation. At that time he sought diligently throughout accessible works for parallel cases, and incidentally his attention was called to abscesses of the liver following dysentery, but he found no cases where, after dysentery, the abscess affected a more remote organ than the liver.

Dr. **Ashhurst** said that he thought it had been established by the experiments of Savory and others, that all the pathological appearances considered as characteristic of "*pyæmia*" (so-called), might be due to conditions to which the names *septhæmia* or *ichorrhæmia* would be more applicable. At the same time, his own observation (which was of course limited) had led him to believe that in those cases where the pyæmic patches had advanced to the stage to which the name of metastatic abscess was usually given, there would commonly be found thrombosis of the venous trunks in the neighbourhood of the original injury with secondary embolism. It had been asserted by some pathologists that in the respiratory process the capillaries of the lung were so much dilated as readily to permit the passage of embolic fragments, and in this way the occurrence of pyæmic patches in remote organs had been accounted for on the embolism theory; Dr. Ashhurst was not, however, aware of any observations which had proved the existence of this hypothetical dilatation. The very rapidly fatal cases of pyæmia, Dr. Ashhurst was disposed to attribute to the absorption of septic material (*septhæmia*), while those cases which depended on thrombosis and embolism, he thought assumed a more chronic character. Even in those cases where thrombosis was found after death, it was very possible that the pyæmic patches met with in the course of the systemic circulation might be due to blood-poisoning secondary to pulmonary embolism; or, on the other hand, the thrombi themselves might be secondary phenomena coincident with or even caused by the septhæmic condition.

April 8. *Cerebral Hemorrhage; Syphilitic Disease of Bones of Nose and Hard Palate; Death in twelve hours; Autopsy; Clot and Liquid Blood beneath Membranes of Left Hemisphere; Abscess in Left Middle Lobe; Cirrhotic Liver, with Syphilitic Deposits.*—Dr. T. H. Andrews presented the specimens for Dr. J. A. Buchanan, who furnished the facts and account of post-mortem examination.

Age 39; early history that of dissipation and confirmed intemperance, with recent attempt at reform but partially successful.

At 11 P.M. was seized with headache and vomiting of undigested food, soon after which fell into deep sleep, followed, after slight revival, by convulsions, and subsequent paraplegia, patient evacuating urine and feces involuntarily; pulse sixty, feeble, and intermittent; respiration sighing. Death occurred 11¼ A.M. of the following day, immediately previous to which pulse rose to 160 per minute.

On Thursday morning, March 26th, at 9 A.M., assisted by Drs. Richie and Andrews, I made a *post-mortem* examination. The *cranial cavity* was opened, and the vessels of the right side were found turgid, but the membranes of the left side were completely separated from the cerebral substance; large black clots occupying the interval. When the membranes were opened the blood forced itself out, I suppose, about two wineglassfuls. Upon removing the brain, we discovered, what before had not been suspected, a large abscess in the middle lobe, left side, and inferior surface. The abscess had discharged itself, leaving a cavity with walls of softened brain tissue, which would have contained the small end of a duck egg. There was also a quantity of blood and pus mixed together.

Thorax.—The *heart* was apparently normal, the left auricle and ventricle being quite empty; the right side was filled with a large black clot. The *left lung* was closely bound down to the costal pleura with broad firm bands of lymph, the supposed result of an abscess of the lung in childhood. The right lung appeared to be in a healthy condition.

Abdominal cavity.—For some years the patient had been suffering from what he supposed to be dyspepsia; the *stomach* was found to be in a normal condition. The *liver*, however, almost filled the entire abdominal cavity, and impinged considerably upon the thoracic cavity by pressing against the diaphragm; it extended below the umbilicus and pressed upon the left lateral walls of the abdomen. It is hard, cuts crisply, and has the characteristic appearance of that organ in those addicted to the use of alcohol. There are several tumours along the inferior edge, of a syphilitic character.

Instruments for Removal of Portions of Tumours, Muscular Tissue, &c. during Life for Purposes of Diagnosis.—Dr. Keen exhibited four trocars intended for the above purpose, as follows:—

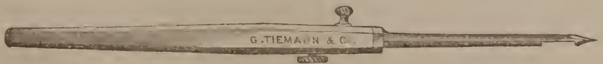


Fig. 1.

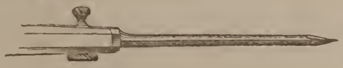


Fig. 2.

Figs. 1 and 2 show Duchenne's trocar. It is introduced closed (Fig. 2), then opened (Fig. 1), by drawing back with the thumb the lower button seen on the handle, and then closed again, thus grasping a small portion of the tumour or muscle in its cavity. On withdrawing it, the portion removed may be examined by the microscope.

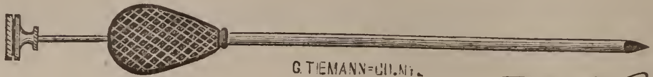


Fig. 3.

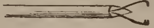


Fig. 4.

Figs. 3 and 4 show Dr. Noeggerath's trocar. It is introduced as a sharp canula (Fig. 3), the central stem is then thrust down, protruding two small branches of a forceps armed with teeth (Fig. 4), which grasp a portion of the part to be examined. By the central stem the forceps are now withdrawn within the protecting canula. The whole instrument may now be removed, the forceps protruded, and the part removed in its grasp examined; or, better still, while retaining the canula in the tumour, the central stem and forceps may be entirely withdrawn through the canula with whatever it may have grasped. If this fragment is not satisfactory, the central portion may be reintroduced, and by changing the direction of the canula, without withdrawing it, a portion may be obtained from another part of the tissue to be examined, and so on till all parts are examined, or the same part repeatedly.

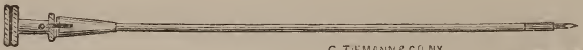


Fig. 5.

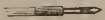


Fig. 6.

Figs. 5 and 6 represent a trocar made on a model brought from Paris to Messrs. Tiemann & Co. The original was made by Matthieu, but the name of its originator is unknown. It is introduced closed (Fig 5), and then the trocar is protruded till its neck is uncovered (Fig. 6), when a piece of the tissue to be examined it was hoped would fall into the orifice thus exposed, and be cut off on its retraction within the canula.

Figs. 7 and 8 represent another trocar made by Messrs. Tiemann & Co. for Dr. Drescher. It is introduced as a sharp canula (Fig. 7), and then the hooked trocar (Fig. 8) is protruded and withdrawn, hooking a portion of the tissue within the canula. This instrument also has the advantage that its central trocar can be removed and reinserted while

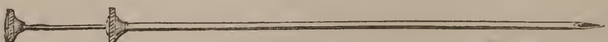


Fig. 7.

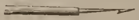


Fig. 8.

the canula remains in the tissue, and thus repeated examinations may be made by a single puncture of the skin and the muscle, the tumour, &c., thus fully examined.

As to their comparative usefulness, I have made some forty experiments with them on the dead body, soon after death, and also when hardened by chloride of zinc, and twice also on the living body.

The last two instruments I have found almost worthless. Occasionally Dr. Drescher's would bring a very small fragment of tissue, but it could not be relied on. Besides that it is very liable to break if the tumour be hard—an accident which happened to me on the third trial with it. Its advantage is its very small size. The third instrument is wholly worthless. I was never able to obtain with it the slightest particle of tissue. Duchenne's and Noegeraths's are both good instruments, and reliable in every way. Both have the inconvenience of being so large as to inflict a more serious wound than patients will generally allow for simple diagnosis, and to require either general or local anæsthesia for their use. Moreover Noeggerath's, in case it encounters hard tissue, may have its forceps broken. But it has the great advantage of allowing repeated and thorough examination of every part of the growth by a single external wound, whereas Duchenne's must be withdrawn with each fragment obtained.

The importance of these little instruments is evident. What the exploring needle and exploring trocar are to tumours with fluid contents, these are to tumours with solid contents, to muscular tissue in a state of degeneration, &c. The diagnosis of the character of the local change, of the presence or absence of any cerebral, spinal, or nervous lesion, so far as may be ascertained by the state of the muscles, of cases of paralysis, trichina, hypertrophy, &c., may evidently thus be made with a certainty heretofore unknown, and the treatment wisely and not blindly carried out.

April 22. *Blood of a Suicide by Prussic Acid.*—Dr. J. H. PACKARD presented a specimen of the blood of Geo. S. Twitchell, Jr., who terminated his life by taking hydrocyanic acid. The blood was not coagulated. Dr. Packard stated that he was present at the post-mortem examination, and that on opening the body, a decided odour of prussic acid was exhaled.

It being voted that a committee be appointed to examine this blood and report upon it, the chair appointed Drs. W. W. Keen and H. B. Hare, who submitted, May 13th, 1869, the following report, with experiments

Report.—The Committee to whom was referred for examination the specimen presented by Dr Packard (viz., a bottle of the blood of Geo. S. Twitchell, Jr., who poisoned himself at about 3 A. M., April 8, 1869) beg leave to report as follows :—

"The blood was carefully examined the same evening, at from 10 P. M. to 1 A. M., *i. e.*, 19 to 22 hours after death, and at various intervals thereafter. The specimen had been removed from the body at about 4 P. M.

Colour: When compared with an ammonical solution of carmine it presented but little difference save that it was somewhat more dull and opaque. On examining it by daylight the next morning and comparing it with the carmine, the blood was considerably more of an orange tint.

Smell: None was perceptible.

Fluidity: It was perfectly fluid, so that a number of persons wrote various sentences from time to time with perfect ease. It never coagulated.

Blood crystals were obtained with the greatest ease in the usual manner and of no unusual appearance.

Hæmin crystals were easily obtainable also by evaporation to dryness and then boiling with acetic acid (glacial). These were obtained both before and after decomposition.

Microscopic examination.—Five different specimens were examined, from both the superficial and the deeper layers with and without shaking.

Red corpuscles were normal in size, *i. e.*, slightly over $\frac{1}{3000}$ inch. Some few were crenated. When in thick layer they showed a marked tendency to the formation of rouleaux. On the addition of water they paled and became invisible to the highest power we used, *i. e.*, one-fifth. By 10 P. M., Saturday, the red corpuscles were nearly destroyed.

White corpuscles.—But few were found singly. Frequent collections, composed of from three to ten, were visible, the nuclei being indistinctly marked. Many of the corpuscles seemed to be losing their defined outline, as if disintegrating. Besides those collections of recognized white corpuscles were others which we regarded as aggregations of disintegrated white corpuscles. They varied in size from three to fifteen times that of a white corpuscle. Their outlines were irregular, and the whole mass appeared to consist of granular matter, in some instances so arranged as to present a radiating appearance. This was most marked when they were slightly out of focus. They were very adherent to the glass, pressure sufficient to cause rapid movement of the red corpuscles not altering their position. The granular margins, however, swayed to and fro, sometimes losing small fragments. In colour they resemble white corpuscles precisely. Some of the masses possessed a relatively darker centre, resembling a nucleus of varying shape and without defined outline.

Chemical examination.—Heat applied to the blood produced instant coagulation of the albumen. No test for HCy showed its presence, nor was anything worthy of note observed.

In order to throw, if possible, some further light upon the matter, we made a number of experiments, as follows:—

Expt. 1. After examining healthy rabbits' blood, as a standard, April 15, at 7.44 P. M., we injected under the skin of the back of a small young rabbit $\frac{1}{3}$ gr. of cyanide of potassium. 7.46 P. M., slight convulsions; fell on its side; pupils markedly enlarged; breathing very rapid; opisthotonos. 7.48 P. M., died, gasping, in convulsions, the urine being forcibly ejected; pupils contracted just after death and then dilated again gradually.

The body was immediately opened and slight peristaltic action of the intestines was seen. It was readily excited by the touch. Heart perfectly still, save rhythmical twitching of the distended right auricle 160 times in the minute; right ventricle slightly contracted; left ventricle firmly contracted; both ventricles empty. None of these last three could be excited by mechanical means. 8.08 P. M. Blood drawn in a wineglass perfectly fluid. 8.20 P. M. Blood perfectly coagulated, and probably had been so for some time. No peculiarity was noticed either in colour, smell, or by microscopic examination. 11 P. M. Rigor mortis noticed, but probably present long since.

Expt. 2. April 15, 10.51½ P. M., injected $\frac{2}{3}$ gr. cyanide of potassium under the skin of the back of a rabbit. Before he could be released he was in convulsions. Released, he jumped six or seven times, and fell over again convulsed. 10.55½ P. M. Died in the same manner as the first, in all respect saving the voiding of urine. 11.50 P. M. Rigor mortis beginning. Desiring to put this blood as nearly as possible in the exact condition of Twitchell's, the rabbit was not opened till noon of the 16th of April. The blood was then perfectly coagulated in the heart, distending only the right auricle. Under the microscope the white corpuscles were beginning to disintegrate, and they were grouped in masses of 3, to 6, and 7, resembling those in Twitchell's blood, but not quite so much disintegrated.

Expt. 3. To test the effect of cyanide of potassium in blood out of the body.

April 22, 5 P. M., killed a rabbit and drew fʒij of fresh blood immediately into each of four cups as follows.: Cup No. 1. Pure blood clotted in five minutes. Cup No. 2. Added in two to three minutes before coagulation had taken place f℥j of water containing potass. cyan. gr. ijss. Soon afterwards it had clotted in small clots, not in a uniform mass. Colour more florid than No. 1. Cup No. 3. f℥j of water with gr. ijss cyanide of potassium were placed in the cup before the blood was drawn. Did not coagulate; colour florid, like No. 2. Both of these were stirred in mixing. Cup No. 4. gtt. v of water containing gr. $\frac{1}{5}$ potass. cyan. were placed in the vessel, and f℥ij of blood added. Almost the whole of it clotted, the clots varying greatly in colour; some few bright red, others darker red.

April 23, 9 A. M. Observed all the cups. The clots were in the same condition as the night before, but the colour was very different. Nos. 1 and 4 were bright red from oxidation. Nos. 2 and 3 dark red from non-oxidation. No. 4 had black clots intermixed with its brighter parts. Nos. 2 and 3 were dark throughout.

Thinking that the alkali of the cyanide of potassium might have rendered the blood fluid we tried

Expt. 4. Rabbit killed with 10 ♏ of acid. hydrocyan. (U. S. P.) f℥ij blood drawn in a wineglass clotted in three minutes, of a dark colour.

Two drachms more were added to f℥j acid. hydrocyan. (U. S. P.) and yet coagulated. The next morning both were, however, so dried that the question of oxygenation could not be determined.

Expt. 5. Rabbit killed with 3 ♏ acid. hydrocyan. (U. S. P.)

Blood drawn in a wineglass coagulated within seven minutes, dark coloured. Ten hours later it was oxygenated to a considerable degree.

Expt. 6. Rabbit killed by 2 ♏ acid. hydrocyan. (U. S. P.) Blood coagulated and oxygenated as before.

Expt. 7. Rabbit killed by 2 ♏ acid. hydrocyan. (U. S. P.) Blood was drawn (f℥iij) in a wineglass, very dark coloured, and was mixed with acid. hydrocyan. (U.S.P.) f.℥j. In four minutes it was coagulated. Ten hours afterwards it had brightened in colour, but not quite so much so as the last two specimens. The clot had this peculiarity that the crassamentum and serum never separated, but it remained a solid clot.

The first point naturally suggested is whether the HCy interferes with the detection of blood or blood stains. Emphatically it does not. It could be recognized before decomposition or even when dry (as Dr. J. G. Richardson of this city has recently shown) by the red blood corpuscles, after decomposition by hæmin crystals, or by the blood crystals or by the spectroscope. Specimens of the hæmin crystals and blood crystals are herewith shown, the latter prepared by Dr. R. W. Hargadine.

The spectroscopic analysis has been investigated by Stokes, and more lately by Preyer. (*Die Blausaüre*, Bonn, 1868, analyzed in the *Glasgow Med. Journ.*, Nov. 1868, p. 70.) When hæmatoglobulin dissolved in water is mixed with KCy or HCy and raised to blood heat or allowed to stand for some time, the absorption bands of oxyhæmatoglobulin are replaced by a single broad band. Probably a combination of the two takes place without loss of oxygen, for a reducing agent replaces this with another spectrum and admixture of air causes this to return to the broad band. It might be supposed then that the cyanide destroyed life by such a combination which would destroy the oxygenating power of the red blood corpuscles. This is apparently confirmed by Expt. 3, where the blood mixed with KCy remained black, no oxygenation taking place. Lecorché and Meuriot (Etude phys. et thérap. sur l'Acide Cyanhydrique, *Archiv. Gén.* May, 1868, p. 539) state the same fact and note that it requires a strong current of oxygen to reproduce the red colour of oxygenation.

But the objection to this view of the poisonous action of HCy is a fatal one, viz., that the spectroscope detects in the blood of persons and animals poisoned by HCy, where no air is added no such bands as those of the compound of the acid with the oxyhæmatoglobulin, but only those of hæmatoglobulin without oxygen save in faint traces. If air is admitted then the blood is oxygenated, the bands of oxyhæmatoglobulin appear and the blood becomes of a bright red. Unfortunately we were unable to make any such spectroscopic test, and must simply state therefore the results of others.

So far as the colour, however, shows oxidation, the bright red colour of Twitchell's blood, a common appearance, according to Casper, and the reddening noted in Expts. 5 to 7 confirm this view.

The combination of the acid with the blood probably accounts also for the absence of the odour of HCy in the blood. In the tissues it is observed, but in the blood it is not. This was so in Twitchell's case, in all the experiments made by us, and is so stated by Preyer, and Lecorché and Meuriot. But though deprived of its odour the cyanide of oxyhæmoglobulin is none the less fatal, and after death the odour is exhaled freely by the tissues. (Preyer in *Glasgow Med. Journ.*, Nov. 1868, p. 74.)

Lecorché and Meuriot state also that the blood in such cases resists decomposition longer than usual (p. 541.)

As to the coagulation of the blood in cases of poisoning in man, no absolute rule can be stated, but more commonly it is fluid. Guy (*Forensic Med.*, p. 579) says the blood, "though usually fluid, is sometimes coagulated." Taylor says it is "dark coloured and liquid." (*Med. Jurisp.*, 8th edition, p. 147.) Casper says it is always fluid. In animals, however it may be in man, our own experiments would go to show the reverse. Twitchell's blood never coagulated. But, on the other hand, in all six of the rabbits poisoned by us, whether by KCy or HCy, the blood coagulated in a few minutes. When mixed with KCy artificially out of the body (Expt. 3), it required a large amount of the acid to prevent clotting, and this too to be added before any coagulation had taken place, otherwise it was of no avail. But when mixed with HCy out of the body in the same proportion it clotted, even when the animal had been poisoned by HCy. (Expt. 4 and 7.) With these discrepancies we can add no light on the subject, either as to the facts or the cause of the frequent though not invariable fluidity of the blood.

The condition of partial disintegration of the white corpuscles found in Twitchell's blood and in Expt. 2, we regarded as probably a post-mortem result in no way connected with the poison. To determine this we have endeavoured to obtain blood placed in similar conditions from the bodies of persons dying naturally, *i.e.*, blood taken from the body about twelve hours after death and examined some eight or ten hours later. Our inability to do this was the reason of our not reporting at the last meeting of the Society. But though still unable to obtain such specimens, we have thought it advisable, even though incomplete in this respect, not to delay our report any further.

Preyer states that atropia is an antidote to the poison. One of us has made a number of experiments on this subject, and although not within the province of pathology, yet we may be pardoned for saying that in all the experiments made the failure of the antidote has been a signal one. (See *Proc. Biol. and Micros. Sect. Acad. Nat. Sci.*, for June, 1869.)

In connection with this report, the following summary of other post-mortem appearances than those of the blood, taken from the works of Taylor, Casper, Guy, and Christison, may prove not uninteresting, although the amount of the poison taken, the interval between its reception into the system and the fatal result, as also the time elapsing between the death and the post-mortem examination, while they have a most important bearing on the subject, unfortunately and of necessity have varied so greatly, that it is almost impossible to form any just conclusion as to what may be expected as post-mortem results after poisoning by hydrocyanic acid.

Rigor mortis is usually fairly marked after the fifth hour succeeding death, but not unfrequently it has not been observed at all.

Putrefaction is said to take place somewhat more rapidly than after death from other causes, but Mr. Taylor thinks not, Orfila having shown that all sudden death, *cæteris paribus*, is followed by rapid decomposition. Lecorché and Meuriot state that the blood decomposes more slowly. The skin is commonly livid or tinged with violet, the nails blue, the fingers not unfrequently clenched, the toes contracted, eyes prominent, glassy and glistening, the pupils dilated.

As a rule there is after death no evidence of the previous occurrence of convulsive movements, even when in the act of death these may have been present.

On opening the body or any one of its cavities, in many cases the peculiar odour of hydrocyanic acid has been observed, though by no means invariably. It appears that when death has followed the administration of the poison very rapidly, the odour may be discovered on first opening the body, even several days after death. Where, however, death has been delayed more than fifteen minutes, it has been almost or quite impossible to perceive the odour, even when chemical tests have afterwards revealed the presence of small quantities of the acid. Two causes influence this result, probably, one, that the elimination of this poison being exceedingly rapid, every moment of time aids its escape from the body—the other, that death usually follows large doses much more rapidly than when small ones have been taken—and hence the body contains more poison after the sudden death.

That the odour has not been perceived is no proof of the absence of the poison. It is certain that many persons cannot perceive its presence in the atmosphere, their noses being as it were "*odour* blind," and besides, as before stated, not unfrequently the acid is present in the body while no odour can be perceived by any one. On the other hand, there are several substances, themselves free from hydrocyanic acid, which resemble it very closely as regards odour, so that the presence or absence of this, taken alone, should have but little influence in a medico-legal investigation.

It seems agreed that there is usually an engorgement of the venous system, in which, however, the vessels of the brain do not invariably share, as, while Casper gives as a rule (*Forensic Medicine*, vol. ii.) that there is *always* hyperæmia of the cranial contents, four out of the five cases quoted by him show a decided *an*æmia of the vessels of the brain and meninges.

The arteries are usually empty; as is the left side of the heart, which is found contracted. The right side of the heart shares the engorgement of the venous system. *The lungs* vary in condition from great congestion, which is somewhat rare, to a condition of anæmia. The stomach, which is generally found to emit a stronger odour than any other part of the body, has at times, after an usually large dose, presented some evidence of slight inflammatory action. There is a general congestion of the abdominal viscera.

The *bladder* is sometimes found full, sometimes empty, and this condition has not been shown to be influenced by the amount of the poison taken.

Those members of the Society who may have occasion to make examinations in cases of poisoning by hydrocyanic acid, should bear in mind the fact, that inhalation is the most dangerous form of administration, and that the odour has been on more than one occasion so strong, as to seriously affect some of those present.

It should also be remembered that the volatility of the poison is so great, that all specimens which it may be necessary to submit to a chemical investigation, should be very thoroughly secured from access to the air, and be examined as soon as possible.

W. W. KEEN, } Committee.
H. B. HARE, }

Hemorrhage on Floor of Fourth Ventricle, with Laceration of both Hemispheres of the Cerebellum. Fibroid Tumors of Uterus and Ovaries.

Dr. HARGADINE exhibited the specimens, from a German woman, aged 72, who had been admitted to St. Mary's Hospital, October 22, 1868, with a large carbuncle in right lumbar region, from which she had completely recovered. About 8 A. M., of April 21, 1869, while walking across the floor, she fell, but arose and attempted to walk, when she again fell. In a few moments she became insensible, with pupils small, respiration stertorous, pulse hard, bounding, and somewhat frequent. There were twitching of the left eyelid, and convulsive movements of the legs. Death ensued in ten minutes after the first symptoms appeared.

Post-mortem, 12 hours later.—On opening the membranes of the brain, at least a pint of blood gushed through the opening. The vessels on the surface of the brain were congested, and there was considerable effusion beneath the arachnoid, especially under the cerebellar portion. Much serum was also found in the lateral and third ventricles, and the substance of the brain was soft. The hemorrhagic effusion had taken place principally in the fourth ventricle, producing extensive laceration of both hemispheres; the largest cavity, in the right lobe, was as large as a hen's egg. The cause of death is here apparent.

The *veins and right side of the heart* were distended with fluid blood. The *heart* was small, its cavities but little more than half the usual size, while their *walls* were thickened. There was calcareous deposit upon the *valves* and throughout the *arterial system*, especially in the aorta below the diaphragm. It was also noticeable in the splenic, superior mesenteric, and carotid arteries at base of brain. The *lungs* were emphysematous, the *liver* and *kidneys* decidedly fatty. Other organs healthy, except uterus and ovaries.

The former was small, and protruding from the os was a small fibroid polyp with its attachment to the fundus. On each side of the fundus, at the orifices of the Fallopian tubes, two small tumours were noted, presenting an external fibrous covering inclosing a calcareous nucleus. On the *right ovary* was a fibroid tumour, glistening white in appearance, very hard, and about *six* lines in diameter. A smaller one was found on the left ovary, also with a calcareous nucleus. The microscopic examination of these tumours showed a network of fibrous filaments with great numbers of nucleated, oval, and round cells.

Myomata of the Uterus, Broad Ligaments, and Ovaries; Calcareous and Suppurative Degeneration.—Dr. TYSON presented the specimen for Dr. JOHN NEILL, who furnished the following history:—

The tumour is from the womb of an unmarried lady, 58 years of age, who had been riding out and eating heartily until five months ago.

The tumour, as the family called it, was noticed fifteen or twenty years ago, and many of our most eminent practitioners advised her to think nothing of it, but to maintain her general health. It increased very gradually in size, and at her death was not more than six inches in diameter.

She had been under my care only during the last four or six weeks, and suffered but little local disturbance—occasionally pain down the left limb—though increasing, so that for the last three weeks she was confined to her bed from inability to move rather than from pain. Her skin was yellow, and when I first saw her she had vomiting and diarrhœa, which were, however, quite controllable. But her most prominent symptom was the loss of appetite, and complete disgust for food. She died from inanition, and within a few days previously to her death had a distressing, irritating cough.

When I opened the abdomen, twenty hours after death, there was no distension of the intestines. The omentum was quite adherent to the front of the uterus. This seemed of the same size as recognized during life. The surface was irregularly covered with patches, nodules, and cysts, containing mostly greenish, fetid pus. The uterus was impacted in pelvis, and adherent to additional morbid growths, originating apparently in the broad ligaments. Many of the growths were extremely rough and dense, such as the ovary, which is presented. These roughnesses were limy and hard to cut. A portion of the uterus is also exhibited. When I cut or dug it out I opened several loculi or sacs containing greenish pus. The walls were extremely hard, infiltrated with lime.

In addition to its morbid-anatomy interest, the case gives several interesting points in its history:—

1. Its long duration and little inconvenience until recently (which she attributed to the tumour having been elevated by an India-rubber bag).
2. No constitutional disturbance.
3. No interior discharge, no blood, pus, or any offensive flow.
4. The formation of pus, or rather the degeneration of solids into fluids in some places, with but little chill, or creeps, and no fever.

Microscopic examination by Dr. Tyson showed the tumours to be fibrous myomata, which in their points of stony hardness had undergone calcareous degeneration. The contents of the cysts were purulent.

Acute Pericarditis.—Dr. S. WEIR MITCHELL presented the specimen and gave the following history:—

I. C., æt. 14, female, had typhoid fever in January, 1869; apparently well to date of March 28th, when she had a chill early in the morning, a second at noon on the 29th, and several on the 30th, when I saw her. There were no pulmonary lesions; but at the apex of the heart could be heard a loud friction sound, and at this spot there was intense pain;

pulse 128; skin hot. About the 4th day, on listening, I heard a double sound at the base, which I supposed might be valvular, but was of dubious origin. These sounds increased in intensity up to death, or near it. The pain was constant and agonizing, and there was no doubt as to the presence of pericarditis. On the 8th day there were distinct evidences of sudden consolidation of the lower third of the left lung, with previously slight cough and a little bloody sputa. On the 13th day she was to appearance much better and stronger, asked for food, and wished to lie down flat, which she had hitherto been unable to do. About 4 P. M., the nurse lifted her out of bed, and while on the commode, she gave a sudden cry, exclaimed, I am dying, and was at once put on the bed. At this time her sense of oppression was terrible; the pulse countlessly rapid, and her cries piteous. She died rather suddenly with a slight convulsion at 7 P. M.

Post-mortem twenty-four hours later.—The liver was slightly enlarged and congested, but no organ was diseased excepting the heart. This organ was hypertrophied throughout, and probably owed a large share of this increase to the effects of her fatal illness. The entire surface of the cardiac, as well as of the reflected pericardial membrane, was covered with numberless fringes and flakes of false membrane so as to leave scarcely any of the natural surface bare. There were about two ounces of water in the pericardium. The sudden death was due in all likelihood to the clots which filled both sides of the heart, but were in the right ventricle and pulmonary artery nearly white, and elsewhere much darker. The valves were healthy. The Committee appointed to examine microscopically the tissue of the heart, submitted the following:—

Your Committee appointed to examine the tissue of the heart, presented at the last meeting of the Society by Dr. S. Weir Mitchell, would report, that microscopic examination showed the muscular tissue throughout the entire thickness of the heart's walls to have undergone a certain amount of granular change. It seemed, also, from several comparative examinations, that the external layer of muscular fibres, immediately beneath the inflamed pericardium, presented a much higher dégree of this degeneration than the deeper layers.

WILLIAM PEPPER, } Committee.
JAMES TYSON, }

Cystic Hemorrhage; Cancer of the Prostate; Death with Uræmic Symptoms.—Dr. TYSON exhibited the specimen for Dr. EDW. HARTSHORNE, who furnished the following history:—

The patient in this case was an unsatisfactory subject of observation, although an intelligent man, as his nervousness and inclination to temporize and resort to irregular practice kept him frequently out of the reach of proper surgical attention. His unusual restlessness, also, and apprehension under suffering, together with a strongly plethoric habit, rendered his paroxysms especially severe and difficult to manage.

The first attack of retention, so far as I could ascertain, occurred about ten years before his death. It must have been a serious one, as the first surgeon called to him—an expert operator, now dead—failed to relieve him after having subjected him to great suffering, and, as he always insisted, produced a false passage, which a more successful surgeon on the same occasion had the good fortune to avoid. I attended him in his second attack, two years subsequently and about eight years ago. On this occasion the bladder was greatly distended and the whole prostatic region, including the outlet of the rectum, was evidently very much congested. I had great difficulty in getting a catheter into the bladder, but finally succeeded with a medium-sized silver instrument, becoming satisfied of the existence of the false passage of which the patient himself complained. In the course of the treatment following this operation I gradually taught him to catheterize himself from time to time; and thus enabled him to escape a good deal of the trouble to which he would otherwise have been liable with the progress of his disease. As a general thing, the difficulty in catheterizing was never great in the subsequent paroxysms, except at the beginning, and was not often serious or decidedly embarrassing, even then. In fact, the patient nearly always managed to relieve himself. Although the "hitch" of a false passage was often noticed during his earlier attacks, it ceased to be thought of in the later, and yet may have interfered more seriously than we were led to believe, notwithstanding the comparative ease with which the instrument was employed, except when obstructed with blood. The enlargement of the prostate was not so perceptible on the side of the rectum, although there was a considerable tendency to hæmorrhoidal irritation and congestion. He also suffered from a liability to inflammation of the left testis, having been repeatedly obliged to take to his bed on account of it.

The different complications were often aggravated by his active habits, and especially by the frequent long railroad journeys in which his business led him to engage. The morbid conditions gradually gained upon him, notwithstanding considerable treatment and more or less constant precautions, in diet and regimen, until he had an attack of hemorrhage, four years ago and six years after the first retention. The blood was passed at first in small quantities and more or less mingled with urine, but soon accumulated in the bladder and coagulated to such an extent that it could not be withdrawn through the catheter in any manner or through any expedient whatever. We only succeeded by letting it alone, having reduced the general plethora, and keeping the patient under the influence of anodynes until the urine had time to liquefy the coagulum and thus to enable us to evacuate the distended bladder. Under this quiescent treatment the patient recovered his ordinary health, the only addition, after the hemorrhage had ceased, to his regular and careful catheterism, being the washing out of the bladder, one, two, or three times a day, with small quantities at a time of tepid water through the ordinary large-eyed silver catheter, and from a two-ounce vulcanite syringe. Astringent injections were sometimes tried, but were never persevered in, as they appeared to give pain without any compensating advantage. The patient himself was led to adopt the small syringe and the divided injections as decidedly more agreeable and useful than the more copious drenchings sometimes resorted to. At the same time he very soon abandoned, with my entire acquiescence as to both matters, the use of the double catheter. In this practice our experience coincided exactly with that of Sir Henry Thompson, which he has so clearly illustrated in his admirable clinical lectures. I am satisfied from observation of this and other cases that the small syringe, with a long nozzle, and an ordinary catheter—especially a flexible one—make the best combination for the purpose of injecting or washing out the bladder. And I have been much gratified at finding the conclusion so well sustained and justified by the theory and practice of one whose authority on these topics is certainly as high as that of any surgeon of our day.

Some two or three attacks, of shorter duration and minor severity, followed the first hemorrhage at intervals of from one to two years. Pains in the back were complained of from time to time, especially in the course of the exacerbations, but no other special kidney symptoms of any kind were noted. Nor was anything found in the urine by chemical tests or microscopical examination that would justify the apprehension, often felt and expressed by us, of structural degeneration.

The habit of our patient, however, of relying upon himself and rather avoiding regular surgical aid, except in great emergency, prevented frequent examinations of this kind; so that no report can be given of the condition of the urine as indicative of the changes in the kidneys for at least a year if not eighteen months before his fatal illness.

The fatal attack began, or rather got beyond his control, on the nineteenth of last March, with a hemorrhage which amounted to as much as a pint of blood passed at one time from the bladder. This was followed by smaller evacuations, more or less diluted with urine, expelled with and without the assistance of a flexible catheter, and gradually subsiding in the usual manner.

Within five days he was out of the house and again beyond my reach. Some imprudence in driving out of town, and walking over rough ground, notwithstanding my often repeated warnings, brought on a renewal, before his convalescence had been established and with greater violence, on the first of April, within ten days of the onset of the attack. Unusual irritation set in; more blood appeared, to the extent of not less than a pint and a half at different times. The bloody urine soon began to be drawn off with difficulty and in smaller quantities, and was evidently accumulating in the bladder as the distension and discomfort steadily increased. He grew weaker also, and more nauseated. These symptoms, local and general, varied from time to time, but the actual progress was in the wrong direction. The limited amount of fluid that could be drawn from the bladder gradually appeared to be blood with little or no urine, and grew more and more fetid, while the distension of the bladder became more decidedly evident, although he ceased to complain of the uneasiness except on pressure. Drowsiness began to affect him; occasional wandering of the thoughts and mutterings were noticed, with sensations of nausea and faintness and a sinking pulse. Uræmia was gradually overwhelming his brain and destroying his only chance of recovery. No blood could be drawn in any quantity, even with the syringe, on account of the clogging of the catheters; and no urinous odour could be detected in the little that was obtained. Saline diuretics had been freely used but without apparent effect; and anodynes appeared to be less needed on account of the hebetude due to the probable toxæmia, or at least accompanying the complete retention of urine. On the evening of the fifth day of his relapse, and after not less than forty-eight hours of continuous distension of the bladder with blood and the entire absence of urine, he took a teaspoonful of oil of turpentine in a tablespoonful of castor oil. During the night his restlessness increased and his mind cleared up considerably, if not entirely, without any aggravation of the local uneasiness or any pain in the kidneys. In the morning, however, he was suddenly attacked with a violent chill, which seemed to produce great agitation of mind as well as body, and under which he rapidly passed into a coma and then gradually sank, the chill lasting forty-five minutes and being followed by death in nine hours. Throughout this attack, and the most serious of the others, Dr. Hartshorne had the advice and assistance of Dr. Thos. Stewardson, of Philadelphia, who, as an intimate friend and constant associate, had him more frequently under observation during his intervals of comparative health. Dr. John Neill, also a frequent companion, was in consultation with us during the final paroxysm.

Post-mortem by Dr. Jas. Tyson in presence of Drs. John Neill and Ed. Hartshorne twenty-four hours after death.—The body having been eighteen hours in ice.

External aspect that of a healthy, robust man, with a considerable but not excessive development of fat. The countenance unusually natural, and rather florid than otherwise, without being flushed; no trace of jaundice or anæmia being present.

No tympanitic distension of abdomen, but some elevation in the pubic region extending nearly to the umbilicus and reaching three inches on each side of the middle line. This elevation could be felt to be due to an oval or pear-shaped tumour which was hard and dull on percussion on each side, but resonant and somewhat less tense in front.

A crucial incision of the abdominal walls uncovered this tumour, and showed it to be the bladder, as expected. It was distended with a fluid except in front, this space in front, to the extent of about four inches in width by five in length, being occupied with gas, and hence resonant on percussion. This peculiar resonance above the pubis had been remarked during the last forty-eight hours before death.

The peritoneum was somewhat injected in patches, and generally congested to a slight degree. About two fluidounces of sero-purulent fluid, which could not be traced to its source, escaped on the left side just below the left kidney, but did not appear to come from the kidney or its ureter. The bladder was found to be a thickened sac, reaching five inches above the pubis towards the umbilicus, by six inches in width and five inches in depth, four-fifths of its cavity being occupied by at least three pints of purple, semifluid and very fetid blood, which must have been without admixture of urine in any quantity, there being not the slightest ammoniacal or other urinous odour. Externally, under the peritoneum, the bladder was somewhat congested in patches, and mottled in portions with a purplish discoloration which was supposed to be the result of post-mortem discoloration. On the middle of the right side was observed a circumscribed projection or pouch-like elevation in irregularly circular nodules, purple in colour and resembling a choroidal staphyloma on a large scale—evidently a triple sac or pocket such as are met with in these cases of frequent or long-continued retention of urine.

The bladder was then carefully removed along with a portion of the urethra, and retained, after evacuation, for a further examination, under more favourable circumstances.

The left kidney was imbedded in a large amount of fat; it was quite flabby and decidedly enlarged, being six inches long by from one and a half to two in breadth. Its capsule was thickened, tearing off easily and being ecchymosed in patches throughout its internal surface.

Externally this kidney was everywhere congested, mottled in colour, granular and evidently fatty. Longitudinal section through the back showed the cortical structure to be thinned and the tubular generally pallid, although congested in portions and fatty, with strongly marked engorgements or vascularity around the cones.

The infundibula, calyces, and pelvis were all dilated. The pelvis would have held at least two fluidounces of fluid. Its lining membrane was congested in arborescent patches. The ureter was dilated to three quarters of an inch in diameter; vascular and thinned in its walls.

The right kidney was also imbedded in fat and enlarged and flabby, being six inches in length by from two to two and a quarter wide. Its capsule was thickened and vascular and easily detached. The cortical structure was thinned, grayish and fatty. The tubular structure was mottled or pallid and congested, the vascularity being strongly marked. The pelvis and ureter also of this side were dilated, thinned, and arborescently congested, the diameter of the ureter being one third of an inch.

The following description of the specimen and of the minute structure of the tumour is by Dr. Tyson :—

"The bladder was laid open superiorly in the median line. The interior presented a markedly vascular appearance, the veins being greatly enlarged. Throughout a large extent of the internal surface, but especially in the base, the mucous membrane was perforated by ulcers of varying size and irregularity, but sharply cut, as though the tissue was punched out, down to the floor of the external coat. While at the right lateral and inferior portion, the three coats of the bladder had been perforated or ruptured, evidently immediately before death, permitting the passage of fluid matters into the pelvis, and accounting for the symptoms of collapse which supervened at this time.

"Most interesting, however, was the condition of the prostate gland, which was substituted in the seat of its middle lobe by a large spherical mass, three inches in diameter, which projected into the cavity of the bladder. The prostatic portion of the urethra was abundantly permeable to admit the passage of an index finger, but from the floor of the urethra in this point starts a false passage an inch and a half or more in length, the source of the difficulty in entering the bladder. The structure of this tumour is clearly cancerous, being made up of a fibrous stroma, in some situations abundant, in others almost entirely absent, filled with cells of varying size and shape from the columnar uni-nuclear cells, resembling those lining the urethra, to huge multi-nuclear cells, in some instances $\frac{1}{500}$th of an inch in diameter, and containing as many as six nuclei. These cells in some situations where the matrix was least abundant constituted almost the only element, giving a medullary character quite characteristic."

The amount of structural alteration of the *kidney*, although not greater than might have been expected in such a case, and perhaps not much more than we had really apprehended, was nevertheless remarkable, considering the comparatively good ordinary health of the patient during his intervals of exemption from critical attacks. He complained of dyspeptic symptoms to some extent, from time to time, and of occasional dizziness, but no more than had been his habit long before he had any trouble with his bladder. He also felt uneasiness about the loins, and this discomfort had been increasing during the latter months of his life with the increasing difficulty in his bladder. Nevertheless he was unusually strong and active for a man of sixty-four years of age, being, as to general appearance, a rather striking example of robust health in all the usual external characteristics. Much of this may have been owing to his very abstemious diet and entire abstinence from fermented or alcoholic drinks, together with constant attention to the state of his bowels, and to a life in the open air. He took very little animal food, consumed a good deal of oatmeal in different forms, and was very cautious in the use of fruits and vegetables. In regard to medication, he was rather too much addicted to dosing, although he rarely went beyond the use of saline mineral water, gentle saline aperients, and castor oil or olive or linseed oil. As might be expected in a man of his plethoric habit, he was often benefited by leeching or cupping to the extent of from ten to twelve ounces of blood taken from the loins or the perineum; and, until the final attack, did not appear to suffer very seriously from his cystic hemorrhages. Under the circumstances it is impossible to say when and to what extent albuminuria and other accompaniments of Bright's disease might have been discovered in the urine. I am reminded, however, of a case of which I happened to see the termination, in which general and strongly marked fatty degeneration of heart, liver, and kidneys with excessive anæmia, were ascertained by careful examination after death; and yet Dr. Tyson, who made the post-mortem inspection, was unable to detect either albumen or tube casts or oil-globules in urine which the patient had voided twelve or fifteen hours before death, although he carefully examined it within six hours after its reception.

1869. *May* 13. Dr. HUTCHINSON exhibited a specimen of *cancer of the liver*, removed from a patient in whom the lung contained a similar deposit.

Melanosis of the Skin and Areolar Tissue.—Dr. S. W. GROSS presented a specimen of tuberiform melanotic cancer, of eleven months' standing, removed from a stone-cutter, seventy-two years of age. The tumour, which was of the size of a walnut, lobulated, and of a sooty colour, occupied the anterior and radial surfaces of the right forearm midway between the wrist and elbow, and was quite movable, but with firm attachments. It was the seat of constant lancinating, stinging pains, which were much aggravated by work, but uninfluenced by atmospheric changes. On its summit there was an abrasion rather than an ulcer, from which there was, now and then, a slight hemorrhage.

In the line of the median cephalic vein there existed two small and hard lymphatic enlargements, which were subcutaneous, and rolled about under the finger. Along the inner edge of the biceps muscle, just above the middle of the arm, there were three secondarily enlarged lymphatic glands, forming quite a conspicuous mass beneath the skin, through which they appeared of a dark colour. In the axilla, also, there was extensive lymphatic involvement. All of these growths made their appearance three months ago.

The patient was losing flesh, his appetite was bad, and the bowels were constipated. On account of the severe pain in the tumour, he was obliged to quit work two weeks ago.

Professor Gross, much against his judgment, but at the man's earnest solicitation, with a view of relieving his sufferings, removed the large mass at the clinic of the Jefferson Medical College. The radial vein and some filaments of the external cutaneous nerve were exposed by the dissection, and one small artery, which alone appeared to nourish the tumour, was ligated.

The growth was found to be intersected by dense fibrous filaments, and was undergoing softening at its centre. Microscopically examined, it was seen to consist of a stroma, with characteristic cells and pigment matter in granules and large masses.

Case of Fibroid Tumour of the Upper Jaw.—Dr. ASHHURST exhibited the specimen, and read the following history:—

R. H., aged 17, a native of this country, and an iron-worker by trade, was admitted to the Episcopal Hospital on Jan. 20, 1869. It was impossible to obtain any satisfactory account of the previous history of this case, but we learned that he had noticed some obstruction of the right nostril for several months, and latterly the cheek had become swollen below and in front of the malar protuberance. On examination the hard palate was found depressed, and in one part much thinned, so that the presence of fluid above it was easily recognized. There was no enlargement in the region of the canine fossa, no encroachment upon the orbit, and scarcely any on the nostril. It was evident that there was dropsy of the antrum, and the swelling of the cheek—which the patient said was not constant—was supposed to be either due to inflammatory thickening, or possibly a new growth, unconnected with the maxillary affection. A trocar and canula were introduced through the bulging fluctuating surface of the hard palate, and a considerable quantity, probably a fluidounce, of serous fluid deeply tinged with blood, evacuated with immediate relief to the symptoms.

The amendment in the patient's condition was, however, of but short duration, and in the early part of February profuse hemorrhage from the posterior nares occurred on three several occasions. He now mentioned (a fact of which we had before been unaware), that similar hemorrhages had occurred before he sought admission to the hospital. Examination at this time revealed the existence of a solid tumour, the presence of which when smaller had been masked by the fluid accumulation in the antrum. It was now perceived that the entire alveolar border of the jaw was displaced downwards and outwards, and the finger introduced behind the soft palate recognized a tumour projecting backwards into the pharynx. The soft palate itself was manifestly depressed by the superincumbent mass. No connection could be traced between the maxillary tumour and the swelling in the cheek, which I thought I could isolate from the larger mass, getting my finger as I supposed behind and entirely around it.

As the patient was rapidly becoming anæmic from repeated hemorrhages, and as the dyspnœa was constantly increasing, it was evident that operative interference was urgently demanded. Accordingly, on Feb. 18, with the approval and assistance of my colleagues, I removed the greater portion of the right upper maxilla (leaving only the orbital plate, which was perfectly normal), and then proceeded to enucleate the tumour with its several ramifications as rapidly as possible. The external incisions were through the median line of the lip along the ala of the nose, and transversely below the orbital ridge. The vessels of the flaps were tied as they were divided. The bone sections were made with strong cutting pliers, and the jaw as well as the deep-seated portions of the tumour wrenched out with the "lion-jawed" forceps of Sir Wm. Fergusson. The last portion enucleated brought with it a bulbous mushroom-like projection, which proved to be the tumour that had been felt in the cheek. The whole growth was very vascular, and a great deal of blood was lost during the latter stages of the operation. The lips of the wound were approximated, and the patient rallied from the chloroform anæsthesia sufficiently to answer questions, but never fairly reacted, and died about two hours after the operation.

The specimen shows the greater part of the tumour and the portion of jaw removed. The antrum is greatly enlarged. The morbid growth appears to have originated from the posterior wall of the antrum, pressing down the hard palate, and partially displacing the alveolar ridge; it seems then to have escaped into the middle meatus of the nose, and to have grown rapidly upwards (towards the sphenoid and ethmoid bones), backwards into the pharynx, and finally to have crept outwards through the pterygo-maxillary fissure, making its appearance below the malar bone, in the soft structures of the cheek. The tumour, under the microscope, showed a large number of small vessels, with fibres, cells, and free nuclei. Even in its present state, shrunken from preservation in alcohol, the tumour is the size of a hen's egg, and before removal, when distended with blood was very much larger—much larger, I may add, than any of us supposed before beginning the operation.

I may perhaps be pardoned for alluding to one or two points of clinical, rather than pathological, interest. The unfortunate result in this case was, I think, manifestly due to the combined effects of shock and hemorrhage. The patient was under the influence of chloroform for a considerable time (and very thorough anæsthesia is requisite for operations on the jaw), but it is to be remembered that without anæsthesia, such an operation would be well nigh impossible. The immediate proximity of the tumour to the base of the skull is a very serious complication, and has not unfrequently been the cause of rapid sinking after the operation. This occurred in a case of Liston's. (*Erichsen's Surgery*, p. 863.) Mr. Hewett attempted to remove a fibrous tumour from behind the jaw by what has been called osteo-plastic resection; the patient died before the operation could be terminated. (*Med.-Chir. Trans.*, vol. xxxiv. p. 43.) Quite recently, Sir Wm. Fergusson in an operation for tumour connected with the upper jaw, found the hemorrhage so profuse that, to prevent a similar untoward result, he thought it better to close the wound, purposing to conclude the operation on another occasion. (*Med. Times and Gazette*, Aug. 22, 1868.) Careful and repeated consideration and criticism of the case I have just narrated, have failed to suggest any plan by which the operation might have been rendered more likely to terminate well. Sir Wm. Fergusson's plan would not have answered in this case, for the tumour itself was so vascular that, to leave any portion in position, would have exposed the patient to an almost certainty of continuous bleeding. Ligature of one or both common carotids would of course be out of the question. Possibly, had the operation been done earlier, the patient being less anæmic at the start, and the tumour smaller, a more favourable result might have been attained. The case was one that gave me a great deal of anxiety and care during the whole time it was under my observation, and, I think, should be placed on record, if for nothing else, as an illustration of the difficulties of diagnosis and the risks of treatment in all cases of tumour connected with the upper jaw and the base of the skull.

Fatty and Contracting Kidneys; Gastric Hemorrhage, Chronic Gastritis and Gastric Ulcer, with Hemorrhagic Erosions.—Dr. JAMES TYSON exhibited the specimens, with the following account of the case:—

Being asked to visit the child of the Rev. G. A. D., my attention was called to the father, who lay abed in the same apartment. He said he was suffering from the effects of a violent cold, but considered himself almost well, so that I gave him little attention and no advice. On my next visit to the child, a day intervening, his wife called my attention to a dyspnœa, and "choking" cough, from which the father suffered, more particularly at night. I now examined him closely, and found all the physical signs of a pneumonia in the lower lobe of the left lung. He was placed under appropriate treatment, but convalesced so slowly that it appeared there must be some insidious cause which interfered with recovery. In searching for this, the urine was examined and found to be albuminous, containing however, but a tenth or less of its bulk. No other symptoms called attention to the kidneys, and a hasty microscopical examination revealed no casts at this date.

The patient was forty-seven years old, and for twenty-five years had been engaged most laboriously in the duties of his profession, exposed to all sorts of weather, often remaining for many hours with his feet wet and cold. He had always considered himself vigorous, but his wife has noted a decline in his physical condition in the past two years, during which, and for some years previous, he has been the subject of occasional attacks of so-called "biliousness," but with no other symptoms calling attention to the stomach. On the contrary, his appearance was that of a hale, well-nourished man.

He was placed upon the peracetate of iron in addition to the previous restorative treatment, and convalescence progressed. By the 27th of March he was so far recovered as no longer to require my visits. I advised him of the possible state of his kidneys, enjoined that he should especially obviate fatigue, continue the use of peracetate of iron, and desired that he occasionally send me specimens of his urine.

I heard nothing of him until April 15th, when I was again sent for by his wife. I found he had unduly exerted himself in the nineteen days interval, in attempting to assume his laborious charge, had again taken cold, and was now suffering with bronchitis involving the bronchi of medium size, accompanied by persistent nausea and vomiting, furred tongue and fetid breath, and withal was greatly prostrated, though he referred all his symptoms to the liver. No trace of the late pneumonia remained. Appropriate treatment was ordered, the urine examined, found to contain a little more albumen, *granular* and *hyaline tube casts*. Quantity not measured, but evidently deficient. At my next visit, I found the vomiting continued, and that in consequence, the treatment of the bronchitis must be restricted to counter-irritation. In the vomited matters was included dark, grumous liquid, presenting the characters of altered blood, and found to be such on microscopic examination, by its crystalline constituents; no corpuscles were present. Acute pain in the cardiac end of the stomach, increased by movements of respiration, annoyed the patient much. No signs of a tumour. The treatment consisted of a blister to epigastrium, subnitrate of bismuth and quinia, with beef tea and stimulus as much as could be retained. This was Sunday the 18th. On the 19th, more vomiting of blood. Remedies, however, retained. On the 20th, more vomiting of blood. Dr. DaCosta saw him this P. M., and continued treatment. Also ordered dry cups to entire chest. No further vomiting of blood until 6 A. M. of the 22d, after which none occurred previous to death. The pain gradually abated, and the bronchial symptoms slowly subsided, but there were occasional fatiguing paroxysms of coughing, attended by tough and viscid expectoration. Some abatement occurred in the gastric symptoms, and as stated no more blood was vomited after the 22d. But food could be retained in but small quantity, exhaustion progressed, and the patient died quietly at 6 A. M.

of the 27th of May, without coma or convulsion, having requested half an hour earlier that his bladder should be emptied by the catheter.

Post-mortem twenty-eight hours after death.—No external peculiarities. A thick layer of subcutaneous fat throughout the body. Thoracic viscera entirely normal; recently inflamed left inferior lobe had quite assumed its natural condition.

The *kidneys* were little more than half the usual size, nodulated, and the left contained two small cysts, each four lines in diameter.

Microscopically, the tubules in the convoluted and straight portion exhibited the characters common to the condition described by Beale as the *fatty and contracting kidney*, being in certain places converted into a connective tissue-like structure, in others highly fatty, while in others, again, the epithelium seemed little altered.

The *stomach* was empty. In its cardiac two-thirds it was suffused with redness, and exhibited marked arborescent congestion. The mucous coat was softened throughout, and exhibited distinctly a single true ulcer. Others may have been obscurely present, but the most interesting feature was the existence of a large number of hemorrhagic suffusions, three or four lines in diameter, surmounted in each instance by a point of erosion, the evident source of the hemorrhage before death.

Microscopic examination revealed a granular condition of the capillaries, but the epithelial lining of the gastric follicles was present in its entirety, and seemed little altered.

The renal malady possesses additional interest in its bearing upon the subject of the different *forms* of Bright's disease. It will be remembered that there are usually made four varieties: 1st, the enlarged and acutely congested kidney of acute Bright's disease; 2d, the enlarged fatty kidney; 3d, the chronically contracted and wasting kidney; 4th, the amyloid or albuminoid kidney. To these, Dr. Beale adds a 5th, which he terms the *fatty contracting kidney.* Whether this be or be not a form or stage of the chronically contracted kidney, I think it can be easily made to appear that the case here presented corresponds, as precisely as may be, to the affection thus indicated by Dr. Beale. In his recent edition of *Kidney Diseases and Urinary Deposits*, p. 61, we read: "One of the most serious forms of renal disease is that in which the formation of new texture, the deposition of fatty matter, and shrinking and wasting of the gland tissue are proceeding at the same time. The occurrence of these different changes renders this form of kidney disease most difficult to investigate, and has given rise to much misapprehension respecting it. Tubes of twice or thrice the normal width are often seen close to tubes considerably less than the natural diameter. Of the first, many are choked with fat, some loaded with epithelium, and others filled with glistening material. In some of the wasted tubes, all traces of original structures have entirely disappeared. Not far off from these, perhaps, tubes may be seen in which little departure from the normal characters can be discerned." With regard to symptoms, he also says, "The attack may come on as one of slight acute dropsy. The urine containing a large quantity of albumen, and being of fair sp. gr. 1020, or higher. There is usually little œdema, and for some time the case appears likely to progress favourably. But the albumen does not diminish. In some instances, vomiting or head symptoms come on after two or three months, and the patient soon dies. The symptoms may not have been at all urgent, and up to within a week or two of the patient's death, there may have been nothing in his appearance to lead us to expect the extremely fatal form of disease from which he is suffering.

"Even a careful examination of the urine does not always enable us to discover the nature of the disease. In one of these cases I failed to detect any casts whatever, although the urine was frequently examined; in another, only a few were found, with a very few fat cells interspersed." Again, "Persons suffering may not be aware that anything is the matter, even up to a few weeks before death. They are often full coloured, well nourished, and are perhaps considered by themselves and their friends to be in thoroughly good health. The patient, perhaps, consults the practitioner on account of *obstinate vomiting*, giddiness, and feeling of heaviness about the head, and dimness of sight. At this time, there may be *little to direct the attention to the kidney;* but if the practitioner examines the urine, he may find a very large quantity of albumen present. I have seen cases in which the nausea and headache were the only symptoms complained of, and have been surprised to find, on examination, evidence of advanced kidney disease"

The history of the foregoing case need but be recalled, to trace the almost complete correspondence throughout, between it and the symptoms and state of the kidney detailed by Dr. Beale. It is this sort of case, according to Beale, which sometimes presents itself for life insurance, and unless the risk is refused on the ground of doubtful habits, the case may not be rejected, and the life drop within a month, the proposer himself having been assured that he was well at date of examination. And I must confess, had my own patient presented himself for such examination three months previous to death, I should most probably have recommended him. And the conclusion of Dr. Beale upon this point is undoubtedly correct, that nothing but an examination of the urine in every instance can save life insurance companies from occasional losses of this kind.

May 13. Dr. THOMSON presented a specimen of *Hypertrophy and Dilatation of the Heart with Insufficiency and Cretaceous Degeneration of Aortic Valves.*—The patient was twenty-nine years old, and exhibited previous to death most of the usual symptoms of the disease.

Malignant Disease of the Stomach; Perforation; Death from Peritonitis.—Dr. THOMSON presented the specimen with the following history.

M. H., a seaman, aged forty, entered the Episcopal Hospital January 20, 1869, suffering from a contusion of the left side caused by a fall into the hold of a vessel. No serious injury had been received, but as the man seemed to be in feeble health, and stated that he had been exposed to malarious influence, he was placed upon a tonic course of treatment, and, as a convalescent, performed duty as assistant nurse in the ward. He took his meals at the full diet table, and gave no indications of the serious lesion which then existed.

Feb. 5. He complained of acute pain in his side, which increased, and was accompanied by vomiting for the first time on the 6th. Acute peritonitis was recognized, which followed a rapid course, and caused his death on the 8th.

The autopsy was made by the resident, Dr. Mustin, who states that the abdominal cavity contained a quantity of yellow fetid fluid. The stomach was adherent to the transverse colon, and in the midst of a large mass of scirrhus a perforation of the walls of the stomach was observed. It is worthy of note that such extensive disease should have caused severe symptoms only a few days previous to death.

Dr. AGNEW recalled a case analogous to this described. An employee in a wall-paper establishment had been a confirmed dyspeptic for many years, complaining of oppression and eructation of food, but was never disqualified for work. On the day before he died, going into the yard, he experienced a sensation as of something "giving away." He went to bed in extreme pain, followed by tympany and stercoraceous vomiting, and died in forty-eight hours. A post-mortem examination revealed perforation by ulceration from malignant tumour of the stomach.

Report of Drs. Harrison Allen and Edward Rhoads, the Committee to whom was referred the above Pathological Specimen.

The specimen was preserved in alcohol, but the tissues were not shrunk. The growth commenced abruptly about midway along the lesser curvature, involving the outer wall and upper and lower borders up to the immediate proximity of the pylorus. The growth consisted of a series of nodular enlargements blended irregularly together, and forming by their projection on inner aspect of anterior surface a cup-shaped cavity about one and a half by two inches in dimension. The cavity was of irregular depth, and presented a prominent, elevated rim, one-half to three-fourths of an inch in width, except for a space of about an inch where it was flattened, the growth here having extended under the peritoneum outwardly. The bottom of the cavity was ruptured This opening was about an inch and a half long, had firm nodular walls, and looked downwards and forwards. The pylorus itself was not thickened, but was reached by a hardened nodule at its upper and lower borders. The mucous membrane of cardiac end appeared healthy. Around the edges of the crater-like cavity it was still smooth but seamed and contracted, and at one point there was a pedunculated process extending downwards. This measured one and a half inches in length. The bottom of the cup was roughened, eroded, and ulcerated. Upon dissection it was discovered that the seat of the growth was between the submucous and subperitoneal layers. When the nodules were cut there exuded a considerable quantity of thick fluid which was found upon microscopic examination to contain oil globules, granular matter, and pear-shaped cancer cells. The same elements were associated in large proportion with fibrous stroma in the diseased tissue.

May 27. *Necrosis of Tibia; Amputation.*—Dr. PACKARD exhibited the amputated leg of John Davis, æt. 39. There appeared no other exciting cause than a blow from a piece of timber on shipboard. The prominent symptom was intense pain, on account of which he implored amputation.

Dr. AGNEW had previously seen the patient, both at the Clinic of the University of Pennsylvania, and at the Pennsylvania Hospital. At the latter he admitted a history of syphilis. He complained of the intense pain, and at the hospital, Dr. Agnew had trephined the bone, thinking there might be abscess, but it proved healthy at that date.

Albuminoid Degeneration of Kidneys; Pericarditis; Embolism of Brain and Spleen.—Dr. HUTCHINSON exhibited the specimens, and read the following history of the case from which they were derived:—

J. J. M., æt. 35, an Irishman, shoemaker, single, a moderate but never an excessive drinker, was admitted into the Penna. Hospital Feb. 11, 1869. Patient's health has always been good until about three years ago, when he was under treatment at the Pennsylvania Hospital, for a slight attack of dropsy, which was accompanied by such an excessive flow of urine as to lead to the suspicion that he might be affected with diabetes. The dropsy yielded, however, to the remedies employed, and he seems to have been in the enjoyment of at least average health, until the beginning of the present year, when, upon awakening one morning, he found that his left eyelid drooped, and that there was paralysis of the left side of the face, together with some œdema. Epistaxis also soon after took place and has recurred repeatedly, being probably dependent upon ulcerations of the nasal mucous membrane. Soon after he noticed increased frequency of calls to micturition, occasionally as many as twenty during a night. There was, however, no difficulty nor pain in passing his urine, which flowed in a small and feeble stream, but never came away involuntarily. At the time of his admission there was a tendency to the accumulation of food between the teeth and the cheek on the left side, but there was no other evidence of facial paralysis; there was still swelling of the face, but no ascites nor œdema of the lower extremities. His urine was found to be increased in quantity, 96 ounces being the amount passed in twenty-four hours; it was pale in colour, acid in reaction, of low specific gravity, 1010, and contained about one-fifth of its bulk of albumen. Patient's ozæna gave rise to a very offensive sanious discharge. The treatment adopted consisted in the administration of Basham's mixture, and an astringent injection for the nostrils. Microscopic examination of the urine was made by Dr. J. G. Richardson. A few moderately dark granular casts, without cells or blood corpuscles, and crystals of the triple phosphate were found. On March 17, he had an attack of erysipelas of moderate severity which lasted ten days. While convalescing he called my attention to the fact that there was partial paralysis and some hyperæsthesia of the left arm. His heart was at this time carefully examined. The area of percussion dulness was increased, the impulse not very forcible, the sounds indistinct. No murmur was, however, detected. Three days later the paralysis and hyperæsthesia had passed away. On April 24 dropsy reappeared in the face and legs; there was moreover œdema of the lungs, and some ascites. As the œdema of the lungs gave rise to much embarrassment of the respiration, elaterium gr. $\frac{1}{8}$ was ordered. This produced several watery stools, and was followed by great relief. On April 30 I transferred the wards to Dr. J. Aitken Meigs, and the patient passed from under my observation. Dr. Hunter, the resident, however, informs me that three days before the death of the patient, which happened May 15th, choreic movements of the right side of the body, especially of the arm, together with some loss of power on the same side, developed themselves.

The autopsy was made four hours after death.

Head not examined; body œdematous and well covered with fat; Thorax, serous fluid in both pleural cavities; lungs œdematous and compressed by effusion; pericardial cavity distended with about four ounces of fluid; visceral layer of pericardium coated with false membrane of recent formation, adhesions passing between the two surfaces; heart hypertrophied and somewhat dilated (these alterations most marked in the left ventricle); valves competent; some vegetations on the free surface of the aortic valves.

Abdomen: liver enlarged and displaced downwards in consequence of the pleuritic effusion, so that its lower edge reached half way to the umbilicus; spleen enlarged, and contained embolic patches in different parts of its structure; kidneys apparently somewhat enlarged; the surrounding areolar tissue loaded with fat, which was also present in large quantities in the calyces of the kidneys; their surface was finely nodulated;

capsule adherent; on section, the arterial substance appeared to be atrophied; the surface was studded with white points. The iodine test showed the presence of amyloid degeneration.

It is to be regretted that no examination of the head was made, as it would undoubtedly add very much to the value of the case if we knew positively, what we cannot do otherwise than infer, that the paralysis with which the patient was at various times affected, and the chorea which occurred just previously to his death, were caused by emboli in the smaller branches of the cerebral arteries.

Microscopical Examination by Dr. J. G. Richardson.—The kidneys, which had undergone most marked contraction, showed beneath the microscope a peculiar appearance of the Malpighian corpuscles, whose convolutions were filled with a transparent refractive substance, having a waxy lustre, and becoming of a bright red color when acted on by an aqueous solution of iodine.

The uriniferous tubules were, in many portions of the specimens examined, filled with a similar matter, which assumed an analogous tint, though less intense under the application of iodine.

The smaller arteries around which the Malpighian corpuscles were closely clustered, were decidedly thickened, and exhibited much greater rigidity of their walls than normally exists.

Dr. ALLEN exhibited the leg of a patient, in whom amputation was performed on account of varicose veins, and who died precisely two weeks after the operation from "heart clot."

June 10. *Colloid Cancer, involving Substance of Peritoneum and Lymphatic Glands, more particularly along the Vertebral Column, and, to a less degree, also the Pleura.* Dr. WILLIAM PEPPER presented the specimen and read the following history:—

—— ——, æt. about 40, a postman, who had enjoyed general good health, with exception of an attack of malaria and diarrhœa, about 1865, while in army, and a severe attack of jaundice, some years before, from which, however, he entirely recovered without any unpleasant sequelæ, began to notice, in early part of 1868, a swelling in lower part of abdomen. This increased steadily but slowly, without any disturbance of general health.

His account of the beginning of the attack was, that it originated with acute symptoms: violent pain at first in right side, but soon extending over the whole abdomen; vomiting, scanty urine, great sense of prostration. These symptoms subsided after a week or ten days, and left considerable enlargement of the abdomen. As will be gathered from further description of the case, it is probable that they were due to rupture of a small cyst and consequent peritonitis.

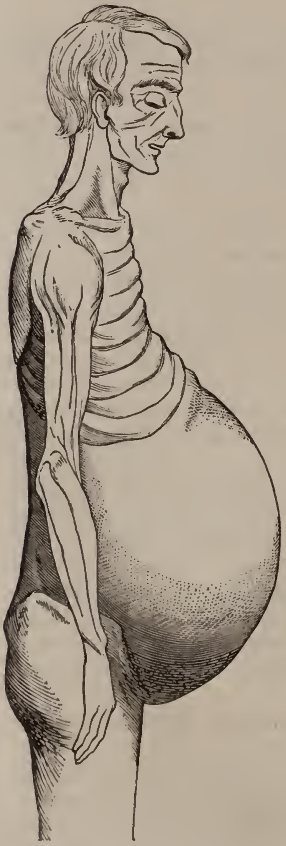
There was for some months little or no emaciation or loss of strength; appetite remained good, and he was merely troubled with occasional sense of epigastric distress and tension. No alteration of urine, which was repeatedly examined and always found healthy. Bowels usually costive, requiring use of laxatives.

He had his clothes made so as to accommodate the growing tumour, and continued on his round delivering letters.

Towards close of 1868, enlargement became so great as to much incommode him—his abdomen being, at that time, as large as a woman at full term. He was then tapped in median line some inches above pubis, and several pints of serous fluid drawn off. The wound healed quickly, and he returned to his work. In a few months (middle of February, 1869) it became necessary to tap him again. There was then distinct fluctuation in various directions in the abdomen; though it was evident that there was a tumour in addition to the free peritoneal fluid. Paracentesis was again performed by Dr. Levis; the trocar being introduced to the left of the median line and higher up. When first introduced, about f℥ij of pinkish serum with little shreds of lymph were discharged, and the flow then stopped. On withdrawing the trocar, the direction of its point was changed slightly, and a puncture made through a thin walled cyst, which discharged several ounces of transparent, almost colourless, viscid fluid—which became a firm, solid, trembling jelly on exposure.

The first fluid was highly albuminous, contained chloride of sodium and urea, and deposited a very few large round granular nucleated cells. The colloid material was not examined carefully. The puncture oozed for some time, but healed nicely. The operation did not cause much reduction in his size, but rather merely a subsidence of one portion of abdomen which had been unusually prominent.

In March, his general health was evidently suffering much. He lost flesh and strength; had no hectic nor sweats; no cachectic appearance; no jaundice, no appearance of marked leucocythæmia; appetite rather poor, and unable to gratify it from ensuing distension; respirations superior costal, and he is unable to lie down on back, though he can lie on either side. No cough or sputa; heart healthy; urine continues normal in quantity and quality, passed somewhat too frequently; bowels costive, opened by laxatives.



His appearance at this time was remarkable. Arms and chest quite emaciated, though not extremely so; legs œdematous from venous obstruction; abdomen enormously distended (see sketch), entirely symmetrical; enlargement projected laterally and anteriorly; projection at epigastrium singularly abrupt, and the ensiform cartilage was bent forwards at a right angle. The whole base of the chest was expanded. The liver and heart were pushed upwards.

There was no tenderness over abdomen, excepting at and near epigastrium, and in neighbourhood of point of puncture in second operation.

Palpation did not elicit fluctuation from one side of the abdomen to the other, but in several portions of the abdomen, as in right side and just above umbilicus, there was distinct fluctuation. Strong palpation caused no sense of shock.

There was dulness on percussion over the entire front and lateral aspects of the chest, the only resonance being found in lumbar regions, and most markedly in either when he lay upon the opposite side.

The veins of the abdominal walls were somewhat distended.

The patient urgently insisted upon an operation being performed for his relief; and as, in middle of April, the tumour was enlarging; œdema and discoloration of legs increasing rapidly; cutaneous veins of abdomen enormously distended on lateral aspect of abdomen, and dyspnœa becoming urgent; an exploratory incision was made by Dr. Levis in median line, about half a gallon of peritoneal fluid evacuated, and an enormous tumour (described below) found filling the abdominal cavity, and entirely inseparable from its attachments to all the viscera. The operation was abandoned; the incision closed, and the patient died in three days.

Diagnosis.—The history of a severe attack of jaundice might have turned the attention to the liver, but the entire absence of any permanent disturbance of its function proved that there was no organic disease of its tissue; while the character of the fluid drawn off conclusively showed that it was not a hydatid growth. The absence of leucocythemia or extreme anæmia, the symmetrical character of growth, and the fact that it began in lower part of abdomen, excluded the idea of a splenic cyst.

The absence of any renal symptoms, hæmaturia or albuminuria, rendered it certain that both kidneys were not involved; and the symmetrical character of the growth rendered it improbable that it could depend upon hydronephrosis of one kidney. Yet the manner in which he described the symptoms of the acute attack in beginning of his sickness, made it resemble somewhat an attack of nephritic colic.

The absence of any cancerous cachexia also, such as might be presumed would attend extensive colloid cancer, made it probable that it was a purely cystic disease.

And the existence of urea in the fluid withdrawn by paracentesis, which was believed at that time to come from a cyst, and not to be peritoneal effusion, also tended to direct suspicion to the kidney.

Consequently the diagnosis rested between enormous hydronephrosis principally of one kidney, and cystic disease of the omentum.

Autopsy.—Thorax and abdomen alone examined.

Upon cutting through the abdominal walls, the peritoneal cavity was found to a great extent obliterated by close and strong adhesions between the parietal peritoneum and the tumour below described. Upon forcibly breaking up these adhesions, the parietal peritoneum was found thickened and studded over with numerous nodules. The entire abdominal cavity was filled by a huge mass, which extended far up into concavity of diaphragm, and downwards into pelvic cavity. This morbid growth was quite symmetrical, and upon close examination proved to be composed chiefly of the greater omentum, with some additional outlying masses. The omentum was enormously hypertrophied, being at least five inches in thickness, and reaching from the epigastrium down to the pubes. Its anterior surface was invested by a thick opaque white membrane. Upon cutting into it, its structure was found to be composed of a stroma of dense fibrous tissue, arranged so as to leave cystic cavities of varying sizes, some being barely visible to the naked eye, and others having a diameter of several inches. The fibrous septa separating these cavities were firm, but rarely thick. The inner surface of the large cavities presented a smooth, serous appearance. The contents of all the cavities were of a thick jelly-like character, varying in colour from a light amber to a decided red. The lateral borders of this mass were rounded, but the lower margin presented innumerable cystic nodules, varying in size from one-twelfth of an inch to one inch in diameter, and containing a similar gelatinous substance. In some places these nodules were partially imbedded in a stroma, but in others they seemed attached to each other merely by delicate fibrous strings. Upon raising this mass, the intestines were found matted together, and imbedded in similar colloid growth. The glands along the vertebræ were enlarged, and a section presented an areolar structure, exuding colloid material. There was an enlarged gland in left groin presenting a similar degeneration.

The abdominal viscera, liver, spleen, and kidneys, presented no positive disease of their structure. There were, however, several very large nodules, $1\frac{1}{2}$ to 3 inches in diameter, of firm colloid growth, attached to under surface of liver; and on left side of abdomen there was a large mass, six inches in diameter, extending from left border of the greater omentum to inner surface of spleen, which was probably the diseased and enlarged lesser omentum.

The peritoneum lining the concavity of the diaphragm was studded over with large and small nodules, which were adherent to and had produced depressions in the concavity of the liver.

Similar nodules were found springing from the pleura investing the diaphragm, especially in the right thorax. The bronchial glands were very much enlarged, and presented colloid degeneration, and there were several small nodules loosely attached to the pulmonary pleuræ. There was, however, no disease of the tissue of the lungs.[1]

It will be observed that, with the exception of the lymphatic glands, the disease was limited to the substance and surface of the serous membranes.

Microscopic examination of the colloid material from one of the cystic cavities in the omentum showed numbers of quite large cells, round, oval, or polygonal, and occasionally aggregated in small plates, like epithelium; with delicately granular contents, and presenting a single clear nucleus. In some instances, the nucleus filled the containing cell almost entirely, so that the cell seemed to have a double contour; in other cases, the nucleus filled the greater part of the cell, leaving a crescent-shaped cavity between the cell-wall and itself. In all these cells, the nuclei themselves were granular, and the surrounding portion of cell was clear.

Examination of a small and unusually firm nodule, whose surface on section showed very few cysts visible to the naked eye, but exuded a glutinous colloid substance, showed a dense stroma of unusually long and closely intertwined fibres, which were pale and flexible, and, in many instances, appeared double-bordered. This stroma included minute cystic cavities, quite closely packed with cells, such as those described above.

A portion of the colloid matter, which was of clear amber colour, presented a sp. gr. 1017 8. Fifteen grammes of it evaporated to dryness yields a residue of .79 gramme. This yielded a blackish-gray ash, weighing .058 gramme, showing the amount of organic matter in 15 grammes to be .732 gramme. Five grammes, treated with f℥ijss absolute alcohol, filtered, and filtrate evaporated, yielded of alcoholic extract .033 gramme. Five grammes, treated with f℥ijss ether, filtered, and filtrate evaporated, yielded of ethereal extract .001 gramme.

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[1] A life-size water colour painting of this specimen was exhibited to the Society.

In answer to an allusion to the diagnostic value of the existence of urea in the fluid withdrawn by paracentesis, Dr. MITCHELL said that the presence of urea was so common under circumstances like these, that he was in doubt as to whether it could be considered of great importance. Thus it is found in the serum of the cavities of the brain, and the aqueous humour of the eye in health.

Dr. PEPPER said that he was aware that it was found in serous effusions, but he thought not in such noticeable quantity as in the present case, unless there has been obstruction to the circulation through the kidney, and interference with its function.

Syphilitic Ulceration of the Larynx.—Dr. S. W. GROSS presented the specimen, and read the following history of the case :—

E. W. S., 39 years of age, a plumber, of temperate habits and married, contracted chancre in 1857, for which he was treated with mercury, and which was followed, without being preceded by bubo, by secondary affections of the skin and throat, and finally, in about eight months, by ulceration of the tonsils and arches of the palate, the latter of which became ultimately firmly adherent to the posterior wall of the pharynx, so as completely to close the posterior nares. The bones of the skull became gradually affected, tender, enlarged, and exquisitely painful, especially at night and in damp states of the atmosphere. With the aid of the iodides, first of potassium, and, for the last twelve months, of sodium, the cranial suffering was kept in check, and the man was able, with occasional short intermission, to pursue his accustomed occupation. He was, however, remarkably susceptible to cold, and his appetite and strength not unfrequently failed him.

During the last three months of his life, he was much confined to his house, the osteocopic pains were very troublesome, and he now experienced great difficulty in his larynx, attended with occasional paroxysms of dyspnœa and of partial aphonia, the latter often continuing for days together. His countenance was wan and sallow, and his spirits were, at times, greatly depressed. A sense of uneasiness was complained of in the region of the stomach, but there was no actual pain or difficulty of deglutition at any period of the illness. The remedies which afforded most relief were iodide of sodium, with bichloride of mercury, and cauterization of the larynx with a solution of nitrate of silver, thirty grains to the ounce of water, every third or fourth day. Morphia and Dover's powder were frequently given at bedtime, and latterly, free use was made of quinia and milk-punch to support the failing strength. For the last week of his life, he suffered much from dyspnœa, and a sense of constriction in the windpipe; his debility greatly increased, but he was still able to be up, and was out two days before his death.

On May 17, he was suddenly seized with an aggravation of his laryngeal troubles, and when I saw him, four hours afterwards, he was tossing wildly about in his bed, panting for breath, exhibiting great difficulty of inspiration, and a peculiar whizzing sound, as if the air were passing through a narrow chink, as in œdema of the glottis. He became rapidly insensible, and expired in an hour after my arrival in a state of asphyxia. I would have opened the trachea, but had no instruments.

Twenty-four hours after death I examined the larynx, latterly the chief seat of the disease. The epiglottis was sound, but the vocal cords were thickened and indurated, and in such close contact as to leave hardly sufficient space between them for the escape of the water that was poured in above. The sinuses were both greatly diminished in size; and on the right side, immediately below the vocal cord, was an ovoid ulcer, nine lines long and six lines wide. It was deeply excavated, with indurated edges, and covered by brownish aplastic lymph, and the mucous membrane in the immediate vicinity was much congested. The cricoid cartilage was materially thickened behind; and the laryngeal mucous membrane, of a pale ash color, was in a similar condition.

Aneurism and Calcareous Degeneration of the Aortic Valves; Spicule resembling Bone in a Branch of the Coronary Artery.

Dr. **Hutchinson** exhibited a heart, which had been removed from the body of a man, æt. 60, who had died after a short illness at the Pennsylvania Hospital. Very little history of the patient could be obtained, but he appears to have been in destitute circumstances, and to have sought and obtained work in a factory in the lower part of the city. While at work he was seen to fall, and was soon afterwards brought to the hospital in an insensible condition. The symptoms upon admission resembled those caused by serous effusion in the brain. The heart was carefully examined by auscultation and found to be beating feebly, but no murmurs were detected. Death took place about six hours after admission.

The autopsy showed that the aortic valve had undergone calcareous degeneration, and there was evidently constriction and insufficiency. In one of its segments was found a cavity containing coagulated blood. One of the principal branches of the coronary artery felt under the fingers as if its coats were converted into bone, but a closer examination showed that the calcareous matter was contained within the vessel itself.

The brain was somewhat softened and œdematous, and there was an effusion of serum into the ventricles and subarachnoid space. Embolism of the cerebral arteries was suspected, but no emboli could be found.

Dr. Hutchinson also called attention to the absence of murmurs during the last few hours of the man's life, notwithstanding the great constriction and insufficiency of the aortic semilunar valves, and attributed it to the feeble contraction of the heart.

Dr. **Stille** said there was a fact of clinical interest and importance in this case, to wit, that, considering the form and degree of the lesion involving the valves, there should have been so feeble a murmur as the report of the case mentions. This case recalled a similar one which recently occurred under his own observation at St. Joseph's Hospital. A woman was admitted with acute articular rheumatism, and on examining her heart, a loud, rough, regurgitant, mitral murmur was heard. She had also a very frequent pulse and hot skin, and the heart was acting with very considerable force. Under an alkaline treatment during the day and opiates at night her condition improved somewhat more rapidly than was anticipated, and she became convalescent. When the fever fell, and the pulse had been reduced nearly to its normal standard, the murmur almost entirely disappeared, so much so that even when the patient was placed in the sitting position, it could scarcely be heard. She continued to improve. With returning appetite her strength increased, and the murmur returned, showing that our power of detecting a murmur at a given moment may depend upon the force with which the heart is acting. At one time, while it was contracting under the stimulus of fever, there was a rough murmur, which Dr. Stillé attributed to an old lesion. After convalescence was established, and while the patient was still weak, it disappeared, because the force of the heart was insufficient to develop the murmur, but as her strength returned the murmur revived, and thus the judgment was confirmed, which was already based upon the quality of the murmur, that the valve was the seat of an old lesion.

Fœtal Monstrosity.—Dr. R. W. HARGADINE exhibited the specimen for Dr. Hillyer, and furnished the following account:—

The fœtus reached the end of the eighth month of gestation, and is about the usual size. The mother had an easy labour, the child being born before the arrival of Dr. Hellyer. It breathed about a half hour. The peculiar external appearances are these: The brain, attached by a pedicle to the posterior portion of the skull, hangs down the back as low as the middle of the dorsal region, covered by its thin membranes, through which the convolutions could be easily seen when the specimen was fresh. The skull is flattened, and there is *apparently* no cranial cavity. The eyes are very prominent owing to flattening of the orbits. The mouth is large and open, and the neck short and thick, giving to the fœtus that peculiar brute-like appearance so characteristic of monsters of this class. The body and limbs are well developed with the exception of the feet, one of which is clubbed. On removing the vault of the cranium, at least one-fourth of the brain-substance was found within its contracted cavity, in the shape of two long flattened lobes, one on each side of the median line. These were distinctly convoluted, and were connected with the extra-cranial lobes by a constricted band of brain-substance. Nearly the whole of the superior portion of the occipital bone together with the posterior arches of all the cervical vertebræ were wanting. The spinal cord began to curve backward about the last cervical vertebræ, and the medulla oblongata, pons Varolii, cerebellum, together with what appeared to be the two posterior lobes of the cerebrum, were entirely outside of the cranial cavity, and formed this pendulous tumour. The brain-substance being soft, and easily torn, the course of the principal nerves and the relations of the ganglia of special sense could not be traced, with the exception, however, of the optic and olfactory nerves, which, arising apparently from the intra-cranial lobes, took their usual course.

In regard to the vascular distribution, some abnormalities were noticed. The anterior cerebral arteries ran the whole length of the intra-cranial lobes, and came off directly from the basilar. The carotid divided into a number of branches which anastomosed with these, but no circle of Willis existed. Nothing abnormal was observed within the thoracic or abdominal cavities except the absence of suprarenal capsules, the most careful search for which failed to detect them.

The foramen ovale between the auricles of the heart was found nearly closed by an exceedingly thin crescentic-shaped membrane.

I would mention that absence of the suprarenal capsules has been observed by Vrolik and others, occasionally, in exencephalous and anencephalous fœtus. No microscopic examination of any portion was made.

June 24. Intestinal Obstruction; Recovery; Subsequent Death from another Cause.

Dr. STILLE exhibited the specimen, which consisted of a portion of gut which had evidently been the seat of intussusception. The lower portion of the bowel was entirely healthy, but at the point of intussusception there was a depressed rim, surrounded by a certain amount of indurated lymph mixed with fat.

Horny Tumour of the Lower Lip.—Dr. S. W. **Gross** presented a specimen of conical horny tumour, five-eighths of an inch long and one inch in circumference at its base, removed from the left lower prolabium, where it had existed for three years. The subject of the growth, John F., aged seventy-one years, eighteen months previously noticed a small, round ulcer at its site, which he ascribed to smoking a short, clay pipe, which he always held on that side. During this period, the ulcer, which was the occasional seat of sharp and shooting pain, remained stationary, and he did nothing for it. It then scabbed over, and the horny tumour formed so rapidly that, in three months, it was an inch and a half long, and resembled a cock's spur reversed. About once every four weeks he clipped the mass with scissors, having previously softened it by means of a bread-poultice, and even then he found it hard to cut. For the past three weeks, the lip at the root of the growth has been the seat of lancinating pain, which sent him to the clinic of the Jefferson Medical College on the 16th of June, when Professor Gross removed it. The horn itself was quite insensible.

Sept. 9. Traumatic Neuroma of Brachial Plexus following Amputation of Humerus.—Dr. **William Pepper**, in exhibiting the specimen, gave the following account of this case:—

The patient was a man aged forty years, who had served in the army during the late war. The amputation had been performed for a compound comminuted gunshot fracture of right humerus, which required the removal of the bone at its surgical neck. The amputation was a primary field operation, and was followed by rapid recovery with an excellent stump. Several years afterwards, symptoms of spinal disease made their appearance, and he died paraplegic in September, 1869.

On post-mortem examination of the parts, there was complete bony anchylosis between the head of the humerus and the glenoid cavity of the scapula. The humerus at the point of amputation was rounded off to a conical shape, and the end of the bone covered in by a thin layer of compact osseous tissue. All of the nerves of the brachial plexus, save the musculo-cutaneous, terminated in a neuroma, about three-quarters of an inch in diameter, which was adherent to under surface of humerus. There was a separate neuroma of small size upon the extremity of the musculo-cutaneous nerve. The brachial artery was obliterated for a short distance above point of amputation, and terminated in a fibrous cord, which was also inserted into the large neuromatous tumour. No examination of the spinal cord has been as yet made.

Dr. **Keen** referred to the recent observations of Dr. W. H. Dickinson and Vulpian (*Amer. Journ. of Med. Sci.*, Jan. 1869) on this subject, and asked Dr. Pepper as to the cause of the anchylosis of the humerus. Dr. Pepper stated that the patient did not come under his observation until some time after the amputation; that during this time he was quite confident no inflammatory condition of the joint was present, and that probably the anchylosis resulted from want of use. There was also a certain amount of anchylosis in both knee-joints and one hip-joint.

Anencephalic Fœtus Born at Full Term.—Dr. W. W. KEEN presented the specimen (which had been for some weeks in alcohol when it was examined) for Dr. WM. H. FINN. The neck, on dissection, showed everything in a perfectly normal condition, including the nerves. The vault of the cranium was entirely gone, the scalp being in direct contact with the base of the skull. No vestiges of the brain were present except some small, brownish-black, semi-solid masses of matter filling up the inequalities of the skull. Whether even this was nervous in character could not be recognized in the condition in which it was found. Some small distinct filaments, probably nervous, ran across the base of the skull to its foramina, and were connected posteriorly with the spinal cord, but they were so soft that they could not be dissected.

The spinal cord was normal. Where the medulla oblongata should be, however, it terminated in a ragged end of softened tissue. The base of the skull was rugged and uneven from irregular development, and the basilar process and surrounding parts were one large and almost perpendicular hill. The eyes were very large and prominent, but apparently perfectly developed. All other organs were normally developed, both in the thorax and abdomen.

September 23. *Fibro-Nuclear and Cystic Growths, involving Ovaries and Peritoneum.*—Dr. J. H. GROVE exhibited the specimen, and gave the following:—

Was called to see Mrs. M., aged 65, in February last. She had a tumour, giving her considerable discomfort, in the right iliac region, and encroaching upon the hypogastric region, measuring about four by five inches. In a few weeks it was noted that fluid was collecting in the abdominal cavity, and this continued to accumulate until the 4th of August, when her abdomen was much distended. Upon that day I tapped the abdomen, removing about five gallons of dark, highly albuminous liquid. At that time her lower extremities were œdematous, she was quite feeble, and considerably emaciated. The œdema almost entirely disappeared in a few days after the tapping.

After the removal of the liquid, the tumour appeared more distinct and irregular in form, while another hard mass was now detected above the first tumour. Both of these tumours could now be distinctly traced through the thin abdominal parietes.

In a few weeks, however, the liquid appeared to be again collecting quite rapidly, so that, on the 13th inst., I tapped her the second time, removing about three gallons of fluid presenting the same character as that removed by the first tapping. She died on the 16th inst., three days after the second tapping.

At the *autopsy*, I found in the abdominal cavity about three pints of liquid, similar to that removed by tapping. The pelvis was filled with an abnormal growth, completely enveloping the uterus and its appendages, the rectum and the bladder, and firmly adhering to the pelvic wall. Attached to this mass, and connected with the ovaries, were two multilocular ovarian cysts; the one on the right side being the larger.

The parietal peritoneum was quite livid and thickly covered by abnormal growths, so as to be almost entirely transformed into diseased structure.

The visceral peritoneum was thickly studded by the same sort of abnormal formation. The covering of the stomach was less involved than any other part of the peritoneum; but near to the pylorus were a few of those masses.

The omentum was completely transformed into a large, indurated, diseased mass.

The mucous membrane of the alimentary canal was normal.

All the other viscera of the abdomen were healthy, excepting their peritoneal coverings.

The lungs were perfectly healthy, but had quite extensive pleuritic adhesions on both sides.

The heart was in a normal condition, excepting slight thickening of the mitral valves.

A hurried examination with the microscope showed the growth to be made up of fibres, through which were infiltrated a large number of free nuclei, with a few fusiform cells, corresponding with descriptions given by Bennett of his fibro-nuclear tumour.

Dr. Tyson stated that he had examined microscopically *solid* parts of these growths said to have been taken from the peritoneum and ovary, and found the following elements: 1st. An imperfect, somewhat granular fibrous stroma. 2d. Scattered throughout this, and floating freely, a cellular element, composed of uninuclear cells of moderate size, free nuclei, and of form representing every grade of oval, from those a little more than round to typical spindle cells. The round and oval cells range from $\frac{1}{2000}$ to the $\frac{1}{1000}$ of an inch in diameter, and were provided with small oval nuclei, approaching the size of a red blood corpuscle, and corresponding in character with the free nuclei, which were abundant. The cells and nuclei were granular throughout, the latter more markedly so, while a number of the former exhibited complete fatty degeneration. 3d. Free oil, in drops and granules.

The fluid of the cysts was not brought to me for examination.

Dr. W. Pepper referred to a case of colloid cancer of the omentum, which he had exhibited before the Society at a meeting in June. The present specimen appeared to him somewhat analogous, inasmuch as it presented a combination of cystic formation, with solid growths. These were also combined in the two ways most frequently met with in cystic malignant disease. Thus the omentum presented the ordinary appearances of colloid disease, save that the cysts were unusually prominent and their contents very thin; whilst the large cysts, developed in connection with the ovaries, presented an indigenous formation of small, flat, sessile, epithelioma-like growths, which closely resembled the nodules observed upon the surface of the visceral and parietal peritoneum.

Dr. H. Allen suggested the possibility of such conditions as those present in this case being due to peritonitis occurring years before, since in such case the peritoneum may present nodules similar to those in the present case.

Dr. W. Pepper, in reply, remarked that this supposition appeared highly improbable to him, since the nodules of organized lymph found on the peritoneum, as the result of inflammation, are usually smaller than those here seen. In addition to this, however, the resemblance between the peritoneal nodules and the indigenous growths found in the ovarian cysts, and the condition of the omentum, seemed to preclude the idea that the morbid process had been one of simple chronic inflammation.

Oct. 14. Dr. William Pepper presented three specimens of *aneurism of the abdominal aorta*, two of which were seated just below the passage of that vessel through the diaphragm, the third being seated at the bifurcation of the aorta.

In each case marked erosion of the vertebral bodies had occurred, extending so deeply in one instance that the spinal canal had been opened: the intervertebral cartilages were comparatively much less destroyed.

The aneurisms were prepared as dry specimens by Jules Bailly.

Sacro-Iliac Disease, with Subsequent Occlusion of the Iliac Veins and Vena Cava. Dr. J. B. MUSTIN presented the specimens and read the following history:—

P. P., aged 25, was admitted to the Episcopal Hospital November 19, 1868, affected with what was apparently a psoas, or iliac abscess, which had opened in the left groin and was discharging freely. He was much reduced by the drain, which had existed some four months, and was confined to his bed from the time of his admission. Under the use of tonics and nourishing diet he rallied somewhat, but the discharge continued unabated. There was at first some difficulty in determining the exact seat of the disease, as neither the vertebra nor the hip-joint appeared to be diseased. A long probe, passed in at the opening in the groin, passed around the hip-joint, upon the dorsum of the ilium, and also under Poupart's ligament into the pelvis, but touched no diseased bone. The case was decided by the Attending Surgeon, Dr. John Ashhurst, Jr., to be a case of sacro-iliac disease. The pus showing a tendency to collect in the tissues of the hip, a counter opening was made over the trochanter for the freer evacuation, and another opening subsequently formed on the inside of the thigh. From these openings the pus continued to flow profusely, amounting at least to a pint daily for several months. The lower extremity on the affected side was from the time of his admission quite œdematous, showing that the circulation was seriously interfered with by the pressure of the abscess. This swelling continued to increase until the left leg was two or three times the size of the other, which was, however, quite emaciated. Livid ecchymotic spots appeared, from time to time, and the integuments threatened to slough, but did not to any great extent. The limb, however, continually exuded a watery fluid, which kept the bed constantly moist.

About the beginning of the month of March, the condition of the patient remaining otherwise much the same, the other leg commenced to swell, owing to obstructions of the circulation on that side. This œdema increased rapidly, until in a few weeks the right limb had obtained the size of the left, corresponding in its general condition with the description already given. This continued until a short time previous to death, which occurred on the 11th of July, when the leg sensibly decreased in size.

The strength of the patient held out remarkably, and the digestive functions were well performed. He had occasional attacks of diarrhœa, which yielded readily to treatment; was also troubled with chronic bronchitis, with abundant expectoration. Notwithstanding the large quantities of food and stimulus which he consumed, he gradually emaciated, and died of exhaustion about eight months after admission.

The *post-mortem* examination revealed a large cavity, with a firm wall on the dorsum of the ileum, occupying the position of the glutei muscles, and another occupying the iliac fossa. These two main cavities were filled with pus and communicated with each other through the sacro-sciatic notch, and also in front. The point of suppuration was at the junction of the left ileum with the sacrum. Both these bones were found necrosed, but especially the sacrum, which was "honey-combed" for several inches. The apex of the bone is also carious from a bed-sore, which had existed over that point.

The great œdema of the lower extremity was fully accounted for. The iliac vessels on the left side were firmly imbedded in the pseudo-membranous walls of the iliac abscess. The artery did not appear diseased, but the vein was much shrivelled and contained a firm, fibrinous clot, adherent to the walls of the vessel, and entirely obliterating its cavity. This extended upwards along the cava as far as the renal veins, and was apparently projecting into these. Below the renal veins the vena cava is entirely occluded, and ends, as it were, in a *cul-de-sac*. The clot also extends downwards into the iliac veins of the right side. The origin of this disease of the vessels appears to have been at the seat of the abscess on the left side, from pressure at that point. For the œdema existed only on that side up to May, 1869, the clot gradually increasing, and at that date reached the cava, and the right iliac vein became thus secondarily involved.

Gunshot Wound of Neck; Paralysis of Left Upper Extremity; Probable Reflex Paralysis of both Lower Extremities; Partial Recovery; Death from Phthisis three years afterwards. HARRISON ALLEN, M. D., read the following history of this case :—

Capt. ——, Penn. Cav., was wounded in a hotly contested action at Darbytown Road, Va., October 7th, 1864, by a conoidal pistol ball, which entered left side of neck, one inch above clavicle, a little to the outer side of sterno-cleido-mastoideus, and lodged. Capt. ——, at the time, was mounted, and in the act of discharging a pistol at a confederate officer, from whom he received the wound. The position of the body, therefore, was upright, and, probably, inclined slightly forward. The exact distance between the combatants is unknown, but it was not great, for the forces were engaged in a hand-to-hand fight, and a simultaneous discharge of pistols between the officers was followed by a demand, each to the other, to surrender.

Immediately afterwards, Capt. —— fell senseless from his horse, and remained in an unconscious state for four hours. Upon his recovery, it was discovered that paralysis of both lower extremities existed, while intense burning pain was experienced in palm of left hand. The precise duration of the paralysis is not known. It improved, however, some time prior to November 24th, 1864 (seventh week), the date of his transfer from general hospital, at Fortress Monroe, to the Officers' Hospital, at Philadelphia.

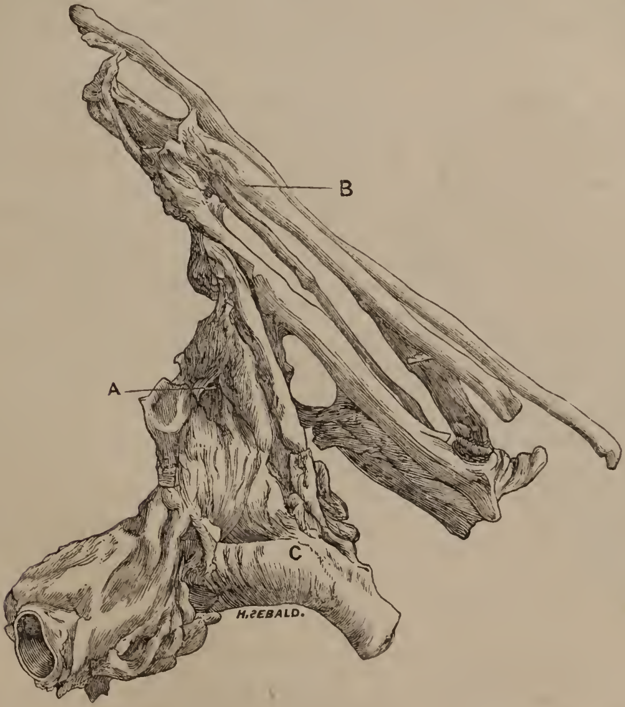
At this time the right leg enjoyed a slight degree of motion, which, by December 1st (eighth week), had increased. This was also the case with the left leg, but to a less degree. The arm remained useless and painful. As far as could be learned, the recovery of sensation preceded that of motion. By April 1st, 1865 (fifth month), Capt. —— could walk with crutches, and by May 4th had recovered sufficiently to permit him to return to his regiment. The burning pain in hand persisted, however, until August, 1865 (tenth month), when it became more endurable, but did not disappear until some time later. At the last-mentioned date he was mustered out of service.

His condition at this time was as follows: Recovery of right side of body, excepting foot, which could not be extended completely, and was sensitive to moderate degrees of cold. Recovery of motion in left lower extremity, excepting power of extension, which was impaired. In act of walking, the limb was swung outwards and forwards by a peculiar motion, probably chiefly accomplished by the abductor and rotator muscles at hip. Sensation remained obtunded.

In the left upper extremity the motion had been restored, except in the extensors and flexors of the hand. The fingers were rigid and permanently semi-flexed. The palmar pain had almost entirely disappeared, but general sensibility was diminished. The nutrition of the member was very deficient.

Capt. —— remained in this condition until November, 1866 (thirteenth month). He was able to walk distances of several squares at a time, and to attend to the duties of his occupation as clerk. In the latter part of November symptoms of phthisis set in. A severe attack of hæmoptysis occurred in December, and from this time the disease advanced (presenting, so far as was learned, no peculiar characters), to terminate fatally October 25th, 1867, about three years from date of reception of wound.

Fig. 1.



A Position of particle of lead; B. Brachial plexus of nerves; C. Subclavian artery.

Autopsy.—Four days after death, body in ice. Emaciation extreme;

left arm as described in last note; it was of a marble whiteness; the motions of joints perfect, excepting the fingers, which were fixedly semi-flexed.

The cicatrix on neck depressed—not puckered—about the size of a split pea, and was non-adherent.

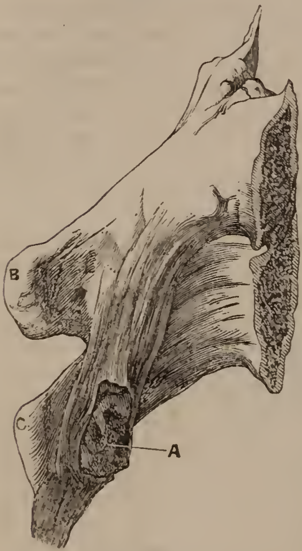
No clue was furnished as to the position of the ball. A careful dissection of the neck appeared to be the only method by which the missile could be found. The results of this examination yielded:—

1. An irregular particle of lead (Fig. 1), about the size of a mustard seed, imbedded in the connective tissue, between the brachial plexus of nerves of the left side and the corresponding subclavian artery.

2. Numerous minute, irregular particles of lead, measuring from a millimetre to half a millimetre in diameter, disseminated through the spinous process and laminæ of the first dorsal vertebra. These curiously situated granules were most conspicuous upon the inner aspect of the parts in question.

3. The ball, lodged deeply in the *right* side of the posterior cervical region (Fig. 2). It was found lying on the side of the spinous process of the second dorsal vertebra, near its tip. It was inclosed in a well-defined capsule, which was intimately associated with the spinous process above by means of a conspicuous exostosis. The ball was of lead, conoidal, and measured thirteen mill. long by nine wide. There was nothing in the form of the ball to warrant the supposition that it was of an explosive character. The spinal cord was congested. The perimembranous fluid was gelatiniform and of a decided pinkish hue. The cord was submitted to Dr. S. Weir Mitchell for examination, who pronounced it free from lesion.

Fig. 2.



A. Ball; B. First dorsal spine; C. Second dorsal spine.

Remarks.—The case is interesting, it is thought, from the following circumstances:—

1. That it is, so far as is known, the only case on record in which the course of a wound, inducing reflex paralysis, has been traced by dissection.[1]

2. That conspicuous change had taken place in and about the membranes of the cord, although there was no proof that the ball had entered the canal.

3. That the position of the ball, on right side of vertebral column, without apparent fracture of intervening bones, as well as the presence of particles of lead in the first dorsal spine, are curious and unique.

4. That it does not follow that upon the extraction of a simple conoidal ball we have removed from the body all the lead which entered it.

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[1] See the well-known Memoir on Gunshot Wounds of Nerves, by Mitchell, Morehouse. and Keen; also, a later contribution, by S. Weir Mitchell, M. D., entitled "Paralysis from Peripheral Irritation."—*N. Y. Med. Jour.*, 1866.

Oct. 10. *Cystic Disease of Kidney, with Ulcer of the Stomach.*—Dr. MUSTIN presented the specimens for Dr. C. B NANCREDE, who furnished the history:—

J. S., æt. 59, admitted July 30, 1869. On admission complained of pain in the region of left kidney, increased by motion or pressure, which he had been suffering from for about ten days, with great emaciation. Before admission urine had been scanty, high coloured, and apparently, from his account, bloody. When examined after admission it appeared normal though still scanty, neither albumen nor casts being discoverable. Under use of diuretics it resumed its normal amount and appearance. There was great hyperæsthesia of abdominal parietes. During greater portion of day but little fever, increasing however towards evening, for the first month, afterwards not perceptible.

During the first week of August diarrhœa and vomiting commenced, and continued with varying intensity until death took place. No permanent effects could be produced by medicines on these discharges, especially towards the last, when they were perfectly uncontrollable. He also had a short, spasmodic cough with but little expectoration. The abdominal pain during the first few weeks was intense, but abated in part under the use of large doses of opium.

When admitted, he had in addition to the above-mentioned symptoms, a singular universal tremulousness, and later in the disease had several well-marked hysterical convulsions. On the access of the vomiting, or shortly after, an almost gangrenous odour of the breath was perceived, at first entirely removable by the use of creasote, latterly only in part. On careful examination on many occasions no disease of the lungs or throat could be discovered to account for it. Three days before death the pain in the lower portion of the thorax increased, and he died in a typhoid state seventy-three days after admission.

Sectio cadaveris sixteen hours after death.—On opening the abdominal cavity no signs of disease were immediately apparent; but on examining the region of left kidney, it was apparently absent. On examining further, however, a fluctuating tumour was found which proved to be the kidney distended by fluid. It was firmly bound down to the surrounding parts. The other kidney was easily removed, was firm and much congested. Stomach was also removed, and presented several congested spots apparently eroded. The heart was natural; right lung bound down by moderately recent adhesions; bladder rather small.

On examining the left kidney microscopically, both pyramidal and cortical portions were found much atrophied and fatty, with the pelvis largely distended and stricture of the ureter.

Dr. TYSON desired to know whether a microscopic examination had been made of the condition of the capillaries of the stomach. In a stomach which was the seat of hemorrhagic erosion and ulceration, exhibited by him in June of this year, and which accompanied fatty and contracting kidneys, the bloodvessels of the stomach were the seat of granular degeneration. In the case now reported the renal disease was plainly the re-result of obstruction, and is accompanied as well by hemorrhagic erosion and ulceration of the stomach. If now a granular change of the bloodvessels of the stomach be found to exist, it will be evidence, if any relation exist between the condition of the kidneys and that of the stomach, that the former is causative, and that the condition of the latter and the symptoms arising therefrom are the result of an effort at substitutive elimination;

whereas, in Dr. Tyson's case, although such an inference is possible, yet it is equally possible to infer a general cause operating to produce both effects. A single instance, however, like this one of obstructive disease, will go further than a large number where there is no way to determine the exact seat of the primary lesions; a minute examination of the stomach becomes therefore of great importance.

On motion a committee was appointed to make such examination. The chair appointed Dr. Tyson and Dr. Mustin, who submitted the following—

Report.—The committee appointed to make a microscopic examination of the vessels of the stomach which accompanied the specimen of cystic kidney presented October 14, and which appears the seat of ulceration and hemorrhagic erosion, report that they find these capillaries the seat of a granular and fatty degeneration beyond a degree which could have resulted from maceration. The gastric tubules, also, exhibited advanced fatty change, being in places packed with oil globules of considerable size, while their proper lining cells had disappeared.

Oct. 28. *Rupture of Liver. Death on tenth day from Internal Hemorrhage*—Dr. HUNTER exhibited specimens and read the following history:—

James Murphy, æt. 26, seaman, admitted to Pennsylvania Hospital October 3, 1869, for injuries received by jumping from a third story window while in a partially intoxicated condition. On admission presented marked symptoms of shock; there were no external wounds, nor could I detect any fracture. Patient complained of great tenderness and intense pain in right hypochondriac region when first admitted, nor was he entirely free from them till he died. Had repeated attacks of vomiting nearly every day, which were not controlled by the usual remedies. The vomit consisted principally of ingesta and bilious matter, but on the third and fourth days clots of blood were discovered in the matters vomited. The stools, likewise, on these days, contained small masses of blood. The countenance at all times was anxious, and he complained of severe pain in region of liver. The treatment consisted of perfect rest, morphia in large doses, and counter-irritants to right hypochondriac region. Died on the 13th.

Autopsy, nine hours after death, confined to chest and abdomen. The body was much emaciated, and its surface decidedly jaundiced. Found no lesions in thorax. On opening the abdomen I found the peritoneal sac filled with a bloody fluid. There were several large clots of blood clinging to the liver, in truth almost completely enveloping that organ. When these clots had been removed, an extensive rupture of the right border involving the entire thickness of the liver, and to a depth from the thick edge of one and a half inches on upper, and nearly two and a half inches on under surface, was discovered. The liver in the vicinity of the laceration was connected to the diaphragm by bands of recently organized lymph. Decided efforts towards a spontaneous cure appear to have been made, as quite a portion of the lacerated hepatic tissue had become united by the fibrin of the extravasated blood The gall bladder and its duct had escaped injury. I was unable by a superficial examination, to find any lesions of the coats of the stomach or intestines, save two or three ecchymosed patches. The other abdominal viscera appeared normal. There were no evidences whatever of general peritonitis, as the peritoneum everywhere, except around the liver, presented its characteristic polished surface.

Dr. **WILLIAM PEPPER** exhibited *a femur which on section presented necrosis* of the middle two-thirds of the original compact shaft. The cancellated tissue of the shaft had retained its vitality and its connection with the cancellated tissue of the articular extremities, and then had an enormous production of compact bone upon the exterior of the original shaft, which thus formed a cylinder of white necrosed bone, entirely unattached but imbedded between the cancellated tissue within and the new-formed compact tissue externally. The exterior of the bone was roughened and nodulated, and presented two small fistulous tracks communicating with the tubular sequestrum above described. No history could be obtained of the case from which the specimen was derived.

Fatal Hemorrhage from the Liver in an Infant.—Dr. **HODGE** was recently called upon to make a post-mortem examination of a baby two and a half days old, considered by its attending physicians and parents to have been perfectly healthy until its sudden death. The abdominal cavity was found filled with blood partly fluid and partly coagulated. Its source was finally traced to the liver, of which the peritoneum covering part of the inferior and part of superior surface of right lobe had been dissected up by the effused blood. No other lesion was found.

Dr. William Pepper suggested that the hemorrhage in this case might have occurred from the rupture of the peritoneum covering a large growth of cavernous tissue. This peculiar formation which, as described by Rokitansky, is especially common in the peripheral portions of the liver, presents on section a tissue like that of the corpora cavernosa, consisting of cells filled with fluid dark blood. There is usually a connection with some large portal vessel, and from the superficial position of the growth, a rupture might readily occur and be followed by profuse hemorrhage.

Nov. 11. Dr. **HARLAN** showed a small piece of cancellated bone, about an eighth of an inch in diameter, which had been expectorated from the lungs of a little girl, at the Children's Hospital, twelve years of age. "The patient is the subject of spine disease, from which she has been suffering for four years. There is very great deformity—posterior curvature—involving the dorsal vertebræ from the 6th to the 10th, inclusive. There is no history of the case beyond the very imperfect one that can be derived from the child's own account of herself. She states that for the last two years she has had more or less cough and expectoration. She has now occasional, but not violent, cough, and abundant expectoration of nearly pure pus. Careful physical examination reveals no decided sign of tubercular deposit, or other disease of the lungs sufficient to account for the amount of expectoration. On suggesting to the assistant physician the possibility that the pus might come from an abscess connected with the vertebræ, I was informed that a piece of bone had been found in the sputa. The other day this piece—much smaller than the first—was expectorated. The child states that it gave a good deal of pain in its passage, and left 'a scratching feeling in the wind-pipe, as if there was something sharp in there still.' It has not been examined microscopically, but I think there is scarcely any doubt of its nature."

Dr. **W. W. KEEN** recalled a case published in the work on *Gunshot Wounds and Other Injuries of Nerves*, by Drs. Mitchell, Morehouse, and himself, in which a sharpshooter received a ball which, removing two teeth and ploughing up the tongue, lodged in the third cervical vertebra. Later, some seventeen pieces of bone were discharged from the body of the vertebra, and one-half of the wall of the vertebral foramen; yet the man recovered so completely that he re-enlisted in the Volunteer Reserve Corps.

Dr. ASHHURST referred to cases reported by Wade, Keate, and Mercogliano, in which large portions of vertebræ had come away through the mouth. In the cases recorded by the first two writers, considerable portions of the atlas had exfoliated. He suggested that the specimen should be examined microscopically, in order to ascertain if it were really, as it appeared to be, composed of bone. In accordance with this suggestion, the specimen was referred to a committee, consisting of Drs. Hargadine, Keen, and Mustin.

Report.—The committee appointed to examine microscopically the specimen of supposed bone, expectorated by Dr. Harlan's patient, report that they unhesitatingly pronounce it to be bone tissue, the canaliculi, lacunæ, and Haversian canals being discernible. The specimen has the appearance of having undergone long maceration, the organic constituents being in great part removed.

Examination of Persons who had been Hung.—Dr. KEEN had an opportunity of examining the bodies of two criminals who had been hanged and had fallen about five feet. In one, the hyoid bone was fractured, but in neither case was there fracture of the vertebræ. As the spinous process of the atlas is wanting, while that of the axis is well developed, there is between the occipital and the spinous process of the axis a marked depression, filled out by the soft parts.

Unless the existence of this depression is borne in mind, we may be easily led to an incorrect diagnosis of displacement of the atlas either by fracture or dislocation.

Hydrencephalocele.—Dr. WILLIAM PEPPER presented a specimen of this, preserved as a dry preparation of the entire skeleton. The birth occurred in the lying-in ward of the Philadelphia Hospital, under the care of Dr. Duer. The child was stillborn, after a tedious labour caused by the difficulty of inducing the head to engage at the superior strait.

The child presented a sac hanging from the occipital region, fully four inches in diameter. On opening this, the dura mater and arachnoid were found to invest its inner surface. The cavity of the sac communicated with the cranial cavity by an abnormal opening in the occipital bone three-quarters of an inch in diameter, seated a short distance above the foramen magnum. The brain was partly contained within the cranium, but in part lay outside of the cranial cavity in the abnormal sac above described.

There was no other anomaly whatever about the skeleton.

Degenerated and Atrophied Hydatid Cyst in the Liver.—Dr. MUSTIN exhibited the specimen for Dr. NANCREDE, and made the following remarks:—

The specimen presented was taken from the body of a man who died in the medical ward of the Episcopal Hospital; a yellow cicatricial spot was noticed on the upper surface of the right lobe of the liver about as large as a silver dollar. On cutting through this, a cyst somewhat larger than a walnut was found, with a fibrous wall in some places cretaceous, containing a yellow gelatinous substance of the consistence of calves' foot jelly; this was divided into segments resembling sections of an orange, and the interstices filled with a cretaceous substance. On chemical examination this proved to be composed of alkaline carbonates, with a fatty matter soluble in ether; under the microscope it presented granular amorphous matter, plates of cholesterin, and oil globules. In the gelatinous substance were found numbers of the characteristic hooklets of the echinococcus; some of which were also noticed in the cretaceous portion. The only other appearances seen in the fluid were granular matter, fat, oil globules, and crystals of cholesterin. No complete echinococci were found, and no free fluid. The cyst had evidently become much atrophied. The liver was not distorted in shape. No similar formations were found in other portions of the body. The man had taken corrosive sublimate with suicidal intent, and was admitted to the hospital under an assumed name, so that nothing is known of his previous history, or of the symptoms which this disease may have at any time produced.

Blood Tumour.—Dr. D. H. AGNEW exhibited the specimen, and gave the following account of the case:—

Stephen G. G——, male, æt. 23, by occupation a farmer, presented himself at the clinic of the University of Pennsylvania, October 23, 1869, with a tumour occupying Scarpa's triangle. It was elastic to the touch, with a very indistinct sense of fluctuation, measuring about four and a half inches by three inches, and ovoidal in form. When firmly pressed upon, some movement could be detected, but only when thus pressed. No sound however, could be heard. Its size was not influenced in any way, either by pressure on the femoral artery above or below. The tumour could be moved or partially displaced from its bed. He represented himself as being exceedingly fond of jumping, leaping at one time the distance of twenty-seven feet—this I think would admit of some subtraction. It was after a feat of this kind, twenty-two months before his admission, that he discovered a swelling the size of a hickory-nut in the groin, unattended with pain or any unusual discomfort. Its growth from that period until his admission into the hospital ward of the College has been steady, and produced then some uneasiness, a tired or weary feeling in the limb. The introduction of the exploring needle disclosed the presence of blood, which materially reduced the size of the tumour as it flowed along the groove of the instrument. On the withdrawal of the needle the tumour soon became tense and full. Its nature was decided to be a cyst containing blood, either formed from the femoral or saphena veins.

I removed it at the clinic of the College. In detaching it from its surrounding connections, it was found to have produced the absorption of a portion of the fascia lata, uncovering thereby the sartorius, and lying directly over the femoral vessels; but on its inner and under aspect, a vein was found, doubtless the saphena, leading into the growth, which was tied before detaching. When the sac was laid open, the continuation of this vessel was found in its interior with several tributary branches, also a quantity of coagulated blood, with much that was fluid. The wall would seem to be formed of the surrounding cellular tissue, adherent to the vein just without the opening in its walls.

Dr. ASHHURST commented upon the symptom mentioned by Dr. Agnew, that this tumour had always exhibited fluctuation, which would render it probable that the contained blood had remained in a fluid condition from the time of its effusion. He referred to the views of Mr. Baker [*St. Bar-*

tholomew's Hospital Reports, vol. i. pp. 201–223], that the fluid blood contained in tumours was usually the result of disintegration of a previously formed coagulum, rather than normal blood in an uncoagulated state, and also referred to a specimen of mammary tumour, which he had himself exhibited to the Society [*Am. Journal of Medical Sciences*, April, 1864, p. 430], in which were two cysts containing fluid blood, the origin of the disease in that case, as in Dr. Agnew's, having been traced to a traumatic cause.

Dr. W. PEPPER said the remarks of Dr. Ashhurst suggested two cases, illustrative of the condition referred to, and one of which was interesting from its rarity. The first was a cyst removed by Dr. Agnew at the Pennsylvania Hospital, from over the spine of the scapula of a little boy. It had a very dense wall, and on being opened was found to contain fluid blood. Microscopically it appeared to contain no white corpuscles, but a full proportion of red corpuscles fully formed. The interior of the cyst presented a serous aspect.

The second case was that of a boy who fell, and was struck by a cart in the right side of the abdomen; the injury was very quickly followed by marked enlargement of the abdomen, which fluctuated distinctly on palpation. It was at first supposed to be a case of ascites, but the swelling was not perfectly symmetrical. After numerous efforts at evacuant treatment, a puncture was made, and a number of quarts of transparent light yellow fluid of low specific gravity were withdrawn, containing a little chloride of sodium, and leaving a little residuum after evaporation. Towards the close, the discharge began to grow turbid and bloody. There was marked diminution in the size of the abdomen, but on palpation there was found a solid mass remaining. The fluid again accumulated and was again drawn off, leaving an indurated mass of crescentic shape, extending from the right of the epigastrium down far into the abdomen. The most plausible explanation appeared to be, that there had been a large effusion of blood which had become circumscribed, and that a complete separation of the serum from the fibrin and corpuscles had taken place. The former was drawn off, leaving the latter remaining as a coagulum. The fluid again formed by breaking down of the clot, and was again drawn off. The large mass remained in the abdomen, but the boy appeared in good health. We have here, probably, a case of the kind mentioned by Mr. Baker, as most common.

November 26. *Suicidal Hanging.*—Dr. PACKARD gave the following account of a post-mortem examination, at which he had been present by invitation of the coroner:—

Mr. ——, æt. 37, a very strongly built and muscular man, on the 8th of November, 1869, hung himself to a banister in his own house, with a piece of picture cord. The cord was composed of a strong twine, wrapped with soft cotton to give it bulk; it was so short that he could scarcely have had more than six inches fall. He cannot have been hanging more than a very few minutes when he was discovered, and a neighbour summoned, who cut the cord. Death had already occurred.

Autopsy, forty-eight hours after death, the body having been in ice. Rigor mortis very strongly pronounced; the upper surface was very pale, but hypostatic congestion of florid hue was present, except where the body had pressed on the bottom of the box; at all such points the paleness was intense. The face was pale, and not at all swollen; its expression was placid. The parchment-like line of the cord, with a slightly-swollen red ridge on either side of it, ran all round the neck, on a level with the thyro-hyoid membrane, which was very strongly crowded backward, so as to make the upper edge of the thyroid cartilage seem to project.

Scalp normal; veins of dura mater congested, but not intensely so; a curious thin clot staining the bone on either side within the skullcap, corresponding accurately to the attachment of the temporal fascia. It formed an arched line perhaps three-eighths of an inch in width; and a corresponding mark existed on the surface of the dura mater. Brain-substance congested. On the upper surface of the convolutions at either side of the longitudinal fissure, were some slight arborescent ecchymoses, and a very small clot effused. A small quantity of bloody serum in each of the lateral ventricles, and the choroid plexus somewhat congealed. Larynx very large and finely developed; the only perceptible lesion about it was the stretching of the thyro-hyoid membrane by the pressure of the cord. There was no tearing of the muscles of the neck, nor could we discover any displacement or fracture of any portion of the cervical vertebræ. Lungs healthy, but deeply congested, especially at their posterior parts. Heart well developed, strongly contracted, and empty; on its surface a somewhat unusual amount of fat; valves all healthy. Blood dark-coloured and perfectly fluid. Abdominal viscera healthy; liver full of blood, although its surface was somewhat paler than normal.

This examination was made in consequence of a suspicion entertained by some of the family that the death was really caused by poison, and that the hanging was done subsequently as a blind. But of this, it is clear, there was no evidence. All the post-mortem appearances were those of suffocation by the pressure of the cord on the thyro-hyoid membrane. In judicial hanging, where there is a fall, other lesions are generally present, owing to the violent stress put upon the vertebræ, muscles, and ligaments, and the length of time during which the suspension is continued. As an instance of pure suffocation by hanging, therefore, this case is not without interest.

Dr. ASHHURST referred to the observations of Louis, quoted by Boyer, as showing that the occurrence of vertebral dislocation in cases of hanging, was due to *twisting* of the neck rather than to any force exerted in the line of the axis of the body, and instanced a case recently reported by Dr. Forbes to the College of Physicians [*American Journal of Medical Sciences*, October, 1869, p. 420], as confirmatory of this view.

Dec. 9. Case of Dislocation and Fracture of the Body of the last Dorsal Vertebra; the subject of the injury surviving a year, dying of Pyæmia the 369th day after the accident.—Dr. CLEEMANN exhibited the specimen and read the following history: David A., æt. 48 years, while working in an ice-house, attempted to jump from a ladder to the "gig," but a short distance away from him: just as he made the spring this apparatus was suddenly lowered, and consequently he passed beyond it and down, through a clear distance of about twenty feet, to the level surface of the ice below, striking upon his feet. I saw him July 23, 1868, about an hour after the accident. The depression of the shock had not then quite passed away; there was tenderness on pressure in the lower portion of the dorsal region, and complete paralysis of the lower extremities. At nine hours later, his general condition was excellent. A more careful examination of the lower extremities demonstrated that, while the paralysis of motion was complete, anæsthesia existed only below the knees, the surface of the thighs being even slightly hyperæsthetic; tested by the hand the temperature of the right extremity was above, that of the left was below, the normal standard. The next day Dr. John Ashhurst, Jr., saw the case with me, and detected some irregularity in the line of the spinous processes, in the region of tenderness.

For some time the case progressed favourably though slowly. The patient suffered at first with uneasiness in the abdomen and general restlessness, but these conditions did not continue long. Two weeks elapsed before the rectum was evacuated of its contents, and then involuntary discharges took place. The urine was drawn off for the first ten days, by which time it had become so viscid from cystitis, that it ceased to flow readily through the catheter; the instrument being then discontinued, the urine dribbled away without difficulty.

The patient complained of some peculiar sensations, apparently not warranted by the condition of the affected parts, as for instance, a feeling of excoriation along the inside of the thighs, and pain in the region of the right hip. Superficial bed-sores appeared but soon healed.

Improvement, as regards the paralysis, was first noticed in the return of cutaneous sensibility in the legs; afterwards in the restoration of muscular power in the thighs; and this amelioration was more rapid in the first months than subsequently. Two months after the accident the patient's back was strong enough to admit of his being carried out.

The following was the condition of the patient on March 30, eight months after the accident: General health is unexceptional; can sit up without support, and with the help of his hands, turn himself over in bed; while lying supine he can raise the right extremity, extended, clear from the bed; he can bend the corresponding knee, but the articulation is somewhat stiffened; the foot is powerless, fixed in an extended position, with the large toe flexed and inclined outwardly; can flex the left knee, which is stiffened in no degree, but cannot lift the whole extremity from the bed; the foot of this side is as powerless, but not so much drawn as the right. Sensation exists as far as the ankles in both limbs; the right is warmer than the left, and both legs are wasted. There is incontinence of urine, but patient is able at times to hold his water for an hour. The bowels are costive; the sphincter ani partly under control. The nail of one of the great toes came away some days ago, while being pared.

On the 28th of the following June, eleven months after the accident, patient complained of a continued feeling of drowsiness; and I was informed that two weeks before a "boil" had begun to form upon the right buttock, with a swelling in the groin. This so-called boil was now a circular ulcer, about one inch in diameter, covered with a yellowish slough; near it was another gangrenous spot of the same size, black and dry; and the skin, including these places, was of an intense red colour. On June 30th pyæmic symptoms appeared.

In dressing the ulcers, July 15, more discharge was observed to flow from one of them than before; the pus, which was not unhealthy in appearance, was traced to an abscess in the upper and posterior region of the thigh; though it ceased to discharge at times, the pus was flowing at the time of the patient's death, which occurred on July 27, 1869, the twenty-seventh day from the access of the first chill, and the 369th day after the reception of the injury.

Autopsy twenty-six hours after death.—Much emaciated; an irregularity of the line of the spinous processes of the vertebræ very manifest; *rigor mortis* well marked.

Head not examined: *thorax*—pleuræ adherent at the base of the lungs, and the corresponding portion of the pulmonary tissues congested; engorgement more marked in localized spots scattered through the parenchyma, presenting the appearance of the first stage of "secondary abscesses;" liver showed no sign of disease; rest of the abdominal viscera not examined. Bladder moderately distended. In the spinal column, above the position of deformity, there was an abscess of some size situated in the cellular tissue in front of the vertebræ; no connection was traced between it and the displaced portion of the spine. The spinal cord was not examined until two months after the patient's death; and though it had been placed meanwhile in a preservative solution, it was not then in a very fair condition for observation: it was noted, however, that the nervous tissue appeared firmer than normal at the position of injury, and that the spinal membranes were, in some sense, consolidated with it, and more closely attached to the walls of the canal; in one place the dura mater was separated by a collection of fluid, which I took to be altered pus, and seemed to extend to a carious cavity in the body of the last dorsal vertebra. There was a dislocation of the left inferior articular process of the last dorsal over the corresponding part of the first lumbar vertebra, while the body of the former appeared crushed between the two adjacent vertebræ. On the anterior surface of the injured segment callus appeared, giving rise to an oblique ridge, which passed from the left side downwards towards the right, and attached this vertebra to the first lumbar; another more extensive mass, connected with the first, rose over the right side of the eleventh dorsal, involving in its breadth the articulation of the twelfth rib and the adjacent parts. A section made antero-posteriorly through the centre of the vertebræ displayed the body of the last dorsal compressed into a wedge-shape, the base of this figure presenting towards the spinal canal, and encroaching upon it superiorly; this projection arose from the body of the vertebra being spread out as it were, and from the slant forward of the vertebra next above; the diameter of the spinal canal was narrowed in this manner from before backwards at least one-half; the greatest compression being on the right side. The inter-vertebral foramen along the injured vertebra on the right side was impinged upon and distorted; and a portion of the arch of this vertebra on the same side had been absorbed.

It is evident from the condition of the vertebræ that the injury was the result of "indirect force"—the body having been violently bent forward, while at the same time it was forciby twisted towards the right side.

In the management of the case no attempt at reduction of the dislocation and fracture was made. Among the pyæmic symptoms, the peculiar sweetish odour of the breath, described as so uniformly present, was not observed, and the yellowish tinge of the skin and conjunctiva also considered so characteristic of pyæmia was present in but a slight degree.

Fragments of a Bug removed from an External Auditory Meatus.—Dr. HARLAN exhibited the specimen, and gave the following history:—

Mr. J., a medical student, consulted me on account of a slight feeling of discomfort in his right ear—a feeling of fulness, and an itching sensation which disposed him to pick at it with the point of a pencil, or anything of the kind that he might chance to have in his hand; and a little dulness of hearing occasionally, which he attributed to both ears. He stated that usually his hearing was excellent, and that there was no difference in the hearing power of his ears. On testing the hearing distance with the watch, it was found to be several feet less on the right side than on the left, though quite good. I found a brown mass in the meatus, which I took to be hardened wax, and attempted to remove it with the syringe. As this made no impression upon it, I removed it piecemeal with the rectangular forceps, not without some delay and difficulty on account of the acute pain that the slightest pressure gave. It proved to consist of the head and first section, two wings, and three legs of a large beetle. The head lay almost in contact with the membrana tympani. Mr. J. immediately called to mind that thirteen years before, when a child, he was aroused at night by an agonizing pain in the ear, which was not relieved until a doctor, who was sent for, poured oil into the meatus. He has never had any pain in the ear since, or discharge, or other inconvenience than the slight annoyance that induced him to consult me. After the removal of the foreign body nothing abnormal could be discovered but a slight congestion easily accounted for by the irritation caused by the extraction. A careful examination made several months afterwards discovered absolutely no difference between the right and the left ear, either in the appearance of the external meatus and membrana tympani, or the hearing distance.

Rupture of Liver.—Dr. C. T. HUNTER exhibited the specimen and read the following history:—

J. T., admitted into Pennsylvania Hospital November 26th, 1869. That morning the patient had fallen from a heavily loaded ash-cart, which passed over the anterior surface of his body at the lower portion of the thorax, obliquely from right to left. An hour later he was brought into the hospital and presented marked symptoms of shock. He had, however, no hemorrhage from the nose, mouth, or ears. There were no external injuries save some slight contusions at lower margin of chest. He complained of *intense* pain and great tenderness in right hypochondriac and both lumbar regions. Later in the day he had nausea, and everything that he ate or drank was almost immediately rejected. The injecta contained no traces of blood. His thirst was excessive. He could lie with comparative comfort only on left side. Late in the evening I drew his urine off, he being unable to void it, and found it free from blood. I then, for the first time, detected a fracture of the ninth, tenth, and eleventh ribs of the right side. There was no emphysema or pneumothorax. He died on the following morning at 5 o'clock, without a struggle.

Autopsy.—Right lung and pleura uninjured. Ninth, tenth, and eleventh ribs of right side fractured transversely. Abdomen distended with bloody serum and recent blood-clots, the latter collected principally about the liver. The liver presented an extensive laceration which begins at anterior margin of the fissure that accommodates the gall-bladder on the concave surface, and runs directly backwards parallel with the longitudinal fissure, for at least four inches, involving the entire thickness of the right lobe. The gall-bladder is not injured. The biliary ducts most probably are involved. The right kidney, on its posterior surface, presents a superficial laceration of about two inches in length. The convex margin of left kidney also presents a slight laceration.

The specimens being referred to a committee to investigate the minute changes in the organs injured, Dr. W. F. Norris reported that the committee had carefully examined the specimens without finding any material lesion.

1870. *January* 13. *Epithelial Cancer of the Hand.*—Dr. DUER presented the specimen and read the following history :—

This arm was removed from Mr. T., æt. 65, Dec. 31st, last. The specimen is a cancroid or cancerous growth from the hand, covering the whole of its posterior and a portion of its lateral aspect. It appears from its history, as derived from the patient himself, that it had existed in the form (and probably condition) of a simple wart for more than four years, attracting no other attention than grew out of the fact of several members of his family having already died of cancer. Somewhat less than a year since he became alarmed at the appearance of a slight inflammation at its base, and accordingly requested the opinion of his family physician, who represented that it probably contained a little pus, and which he sought to evacuate by puncture with a needle. None, however, appeared, and the point of puncture soon became a centre of ulceration, painful and fungoid. The ordinary applications to such conditions failed either to furnish relief from the pain or arrest of the extension of the ulcerative process, and the cancroid mass has steadily grown on to the condition you now perceive it. For the last four months and occasionally during the summer the patient has required large and continuously repeated doses of some anodyne, to maintain even tolerable comfort. During the later periods he has never had a full night's sleep up to the date of the operation. The character of the pain was of the ordinary lancinating kind, and somewhat influenced by the position of the limb. Another distressing feature of the case was the extreme offensiveness of the discharge. The ulcer itself, in life, presented the appearance of a partially developed cauliflower dyed a bright crimson and varnished, so "angry" did it look.

When I first saw the patient, on the day mentioned, his aspect was scarcely that of a cancerous subject, but of a man with a naturally vigorous constitution, well nigh worn out, and dispirited with pain. His general health was otherwise good ; that is, his functions had been normally performed and he had scarcely been sick in his life. The cancerous cachexia could scarcely be said to be at all pronounced. He was anxious to submit to any measure that would promise him relief from the tormenting conditions just mentioned. And as to the propriety of removal of the limb at or about the elbow there seemed to me and my colleagues no question. Of the considerations that influenced the point of selection, and the particulars of the operation itself, I will not consume the time of the Society in discussing. Apart from the perfection of the specimen, the point of most interest in the case is one just alluded to, viz., the existence of cancerous disease in other members of the same family. This is the fourth one that has come under my observation, and two additional ones have been reported to me. The first, a brother of my present patient, died, several years past, with a condition almost precisely the same as this and situated in the same place. No operative interference was permitted. The second case presented a scirrhus of the mammary gland, which I removed at Burlington, three years ago this fall, the patient living about four months thereafter, and dying of a secondary deposit in the lungs. Her death was a painless one, and there was no return of the disease at the seat of removal. The third case was a niece of Mr. T., and was much the same as the last. I removed her breast also at Bordentown, in the fall of 1866, and she died as the last, a painless death, the following summer, from secondary deposit in the lungs, without a return of the disease in the cicatrix.

I have since heard from Mr. T.'s case, and the report is highly satisfactory, both as regards the reparative process in the wound, and the comfort of the patient. He represents that he has not been so free from pain or slept so well for four months as since the operation.

The specimen was referred to a committee, consisting of Drs. L. S. Bolles, F. A. Hassler, and O. H. Allis, for microscopic examination, who reported "that the specimen examined showed a fibrous stroma, with numerous epithelial cells, polygonal, elongated, and irregular in shape; the contents of the cells in some instances contained distinct nuclei with a single nucleolus, but by far the larger portion were filled with granular matter."

Dr. **Packard** desired to ask if he had rightly understood Dr. Duer to speak of the deaths as "painless," in the cases of internal cancer after operation, to which Dr. D. had referred. He had several times seen the most intense suffering in such cases, but never anything like comfort. Of one case in particular, that of a woman who died of intrathoracic cancer in the Pennsylvania Hospital in 1855 (after removal of the breast some eighteen months previously), he had a most vivid recollection. In another case, now under his care in private practice, the sufferings of the patient were extreme, in spite of the free use of anodynes.

Dr. **Duer** replied that Dr. Packard had rightly understood him. In one case he had witnessed a *post-mortem* examination, where the patient appeared to die of apnœa. The lungs were found filled with gelatinoid masses of every size, from a millet-seed to that of a pigeon's egg. Dr. D. knew no particulars in the second case.

Dr. **Willard** recalled a case where the left breast was removed, and six months later the disease returned in the cicatrix. The patient apparently died of exhaustion from repeated hemorrhages, and at the *post-mortem* there were found extensive cancerous nodules in the liver. At no time had she suffered pain in hepatic region.

Dr. **Ashhurst** said that he, too, could recall an instance of painless death from internal cancer, recurring after the removal of an external growth: he had removed in February, 1866, at the Episcopal Hospital, a scirrhous breast from a woman 64 years old, in whom the disease had existed four years. The wound healed readily; but in May, 1867, she returned with a small cancerous tubercle, an inch and a half above the line of the cicatrix of the former operation: this tumour was likewise removed, and the wound again healed without difficulty. During the same summer, however, she was again admitted to the hospital, without any external evidence of disease, suffering no pain, and complaining merely of loss of appetite and debility. Death followed, without any change of symptoms, and the autopsy (notes of which had been furnished by Dr. C. H. Burnett) revealed a cancerous growth on the pleural surface of the costal cartilages beneath the old cicatrix, the organs of the body generally being found healthy.

Dr. **Ashhurst** referred to Dr. Duer's remark, that this patient presented no evidences of cancerous cachexia, and alluded to the view of the late Mr. Collis, of Dublin (with which view the results of Dr. Ashhurst's own observations coincided), that cachexia only attends those cases of cancer which involve important viscera and thus interfere with the process of sanguification. Hence extensive *external* cancer may exist for years, and even prove fatal, without there having been at any time any cancerous cachexia (so called), while a very limited amount of carcinomatous disease in an internal organ may cause an early development of cachexia in its most marked form.

Dr. KEEN also recalled a case which presented itself at the St. Mary's Hospital, in a huckster woman weighing from 175 to 200 pounds, who was in remarkably good health, though she presented a very large cancer of the breast. There was no evidence of cancerous cachexia, though the growth had been present eight months. It appeared to have been produced, as far as circumstantial evidence can be regarded, by local injury, the patient having fallen in passing down stairs, and having struck her breast on some sharp obstacle, immediately after which the tumour began to develop. At the time Dr. K. saw her it was as large as a fist, with an ulcerated surface as large as the palm of the hand.

Dr. RHOADS mentioned that he had a case under observation, in which mammary cancer had existed more than six years, presenting a very large mass, ulcerated and angry in its appearance, and the patient evidently near her death, without manifesting, however, the slightest appearance of cachexia. The mother of the patient perished with cancer of the stomach.

Dr. STILLÉ referred to the case of a woman who called at his office presenting a tumour of the right breast about as large as a pigeon's egg. The woman was remarkably stout, exhibiting every appearance of health in complexion and expression. He was unable to decide as to the nature of the tumour, and referred her to a surgical friend, who decided it was cancer, and recommended its removal by an operation. This was done, the tumour having increased somewhat in the interval. When the wound had almost healed, the edges began to granulate extravagantly, and in a few weeks there was formed an enormous cauliflower excrescence, as large as a child's head at three months. Up to the last moment there was no cancerous cachexia, nor anything in the patient's face to suggest the nature of the disease of which she was dying.

Tumour in the Right Anterior Lobe of the Cerebrum.—Dr. C. B. NANCREDE presented for Dr. J. R. F. BELL the specimen, with a history of the case: A woman æt. 27 was admitted to the Episcopal Hospital in Dec. 1868. She was subject, at irregular intervals, to epileptiform convulsions, which were, for the most part, unattended by loss of consciousness. There was always more or less cephalalgia in the intervals, but after each of these attacks it was increased to an intense degree. The pupils were normal, excepting when under the influence of conium, when the left pupil was largely dilated. Some time in November, 1869, after a much more severe attack than usual, which was attended with unconsciousness, entire loss of power over the left side, with the exception of the fingers, as well as impaired sensation, was found to have occurred.

She remained in about the same condition, with increased cephalalgia, until the second week of December last, when another convulsion was followed by total paralysis of the left side. About ten days afterwards she died, apparently from the lung trouble, though slightly comatose.

The *post-mortem* examination showed both lungs extensively diseased, with a cavity in one. There was found to be inflammation of the membranes of the brain, with easily separated adhesions along the longitudinal fissure and base. On the upper surface of the right lobe was an old adhesion, so tough as to require careful dissection to separate it.

On making a section beneath this, there appeared to be a cicatrix; upon dividing which, a hardened mass was found, which could be turned out of the softened brain substance. Immediately surrounding this mass there was softening and reddening of the brain substance. The rest of the organ seemed healthy, though more softened than could be accounted for by *post-mortem* change.

Dr. ASHHURST referred to the differing views of pathologists as to the connection of convulsions with lesions of various parts of the brain: thus Mr. Solly looks upon convulsions as especially characteristic of inflammation of the tubular portion of the hemisphere. Dr. Watson, on the other hand, considers that convulsions are more apt to attend inflammation beginning in the pia mater or arachnoid. Finally, Mr. Callender, one of the latest writers on the subject, regards convulsions as particularly associated with disease about the track or distribution of great vessels, especially of the middle cerebral arteries, and with the shock of a hemorrhage, and finds them particularly connected with left hemiplegia, and with disease of the right hemisphere, external to the optic thalamus and corpus striatum.

The specimen was referred to a committee, consisting of Drs William Pepper, Schell, and Parry, which made the following report:—

The tumour was irregularly lobulated, and measured about one and a half inches across its base, which was closely adherent to the under surface of the dura mater, the mass itself being imbedded in the brain substance. It occupied a portion of the upper and outer part of the right hemisphere, corresponding to the middle portion of the corpus striatum; and extended fully one and a fourth inches into substance of the hemisphere, being also surrounded by a layer of softened brain tissue. Upon making a section of this tumour, it was found to present two round nuclei of cheesy matter, one-third of an inch in diameter each, surrounded by a quite firm grayish tissue.

Microscopic examination of the central cheesy portions showed them to be composed entirely of oval or irregularly triangular cells, containing much granular matter. Upon treatment with acetic acid, these cells closed up to a considerable extent, and revealed a varying of persistent granules of large size, but no true nuclei. The size of the cells varied, many being smaller than a white blood cell, others somewhat larger. A certain number of spindle-shaped cells were seen mixed with those above described, but neither any true stroma nor any vessels could be detected in these cheesy nodules. There was also a large amount of free granular fat. The dense grayish layers surrounding these nodules proved to consist of a highly vascular fibro-cellular tissue; the vessels of which were large, tortuous, with thin walls and very imperfectly developed perivascular sheaths, and the cells chiefly large spindle-shaped connective tissue cells.

January 27. *Enlarged Inguinal Glands.*—Dr. R. M. TOWNSEND presented the specimen and made the following remarks:—

These glands are principally important on account of their anatomical relations. In making a dissection for inguinal hernia, they lay along the course of the external iliac artery, the part protruding through the external abdominal ring. As they pushed the peritoneum before them, the constriction between the two much resembled a strangulated hernia. On removing the first of them, it presented much the appearance of a testicle. They were firmly adherent to the sheath of the internal iliac artery and fascia of the internal iliac muscle.

The specimen was referred to a committee, consisting of Drs. Edward Rhoads, R. M. Townsend, and J. V. Ingham, who reported "That they found the said specimen to consist of a cluster of enlarged inguinal glands, presenting under the microscope the granular and corpuscular elements found in hypertrophy of the lymphatics without malignant structure."

Case of Excision of the Elbow.—Dr. Ashhurst exhibited the recent specimens from a case of excision of the right elbow-joint for chronic synovitis, followed by ulceration of the cartilages and erosion of the articulating extremities of the humerus and ulna. The patient was a man aged 25, who had been disabled by the condition of his joint for five or six months. The origin of the disease could not be ascertained. The operation was done by the simple longitudinal incision, and the portions of bone exsected were very limited in extent: the head of the radius being healthy, merely its articular surface was removed. The chief points of clinical interest were in reference to the diagnosis, and the peculiar line of incision. The painless character of the swelling, and the degree to which passive motion could be carried, had led some of the gentlemen who saw the case to doubt the interarticular nature of the affection. The peculiar shape of the part, however, with the helplessness of the limb, and the development of grating upon making flexion and extension while the patient was etherized, were, Dr. Ashhurst thought, sufficiently significant of the true state of affairs. The longitudinal incision, which was adopted in this case, Dr. A. considered preferable to either the T or H incisions, as making a smaller wound, and one which had no tendency to gape. The operation, though somewhat more prolonged by this method, was sufficiently simple, and presented no particular difficulties.

The specimens showed very well the characteristic inflammation and degeneration of the articular cartilages and synovial membrane, the bone being hyperæmic and eroded at certain points.

Feb. 10. *Chronic Inflammatory Deposit in Testicle.*—Dr. C. T. Hunter presented specimen, and read the following history:—

T. C. M., æt. 24, grocer, admitted into Pennsylvania Hospital January 28, 1870, for chronic orchitis; single; temperate habits; no history of tubercle or carcinoma. Denies having had syphilis, but acknowledges having had ulcerated sore throat some eighteen months ago, which has left a communication between his nose and mouth, through the soft palate. Within the last eighteen months, has had two separate attacks of iritis in the left eye. About four years ago contracted gonorrhœa. This was treated with balsam copaiva, and after the subsidence of the acute symptoms, used astringent injections. At the end of six weeks, the gonorrhœal discharge had ceased, but in the fortnight following, his right testicle swelled to the "size of his fist," as he expressed it. During the attack of gonorrhœa, suffered considerably from irritation at the neck of his bladder; this vesical trouble persisted for seven or eight days after the urethral running had been checked. The treatment for orchitis consisted of applications of lead-water and laudanum to the scrotum. At the expiration of a week, the testicle had nearly resumed its normal size. Some eighteen months later, patient for the second time noticed that his right testicle was slowly enlarging, his attention being attracted to it by dull-aching pains in the gland, a feeling of weight, etc. He seemed to think that the second attack was caused by lifting and carrying heavy parcels. Local depletion by means of leeches to the cord, anodyne and astringent applications to scrotum, were only partially successful in reducing the size of the gland. From that time till the date of his admission into the hospital, the gland has been somewhat enlarged, and quite sensitive. Small abscesses in the walls of the scrotum have been evacuated from time to time, and two days before coming into hospital, four or five ounces of a straw-coloured fluid were drawn off from scrotum. At a consultation of the surgical staff, it was determined to remove the diseased gland; the patient himself was very anxious to have the operation performed, as the disease had been a source of great annoyance to him for the last year and a half. On the 2d of this month castration was performed by Dr. Hewson.

The cord was secured by a medium-sized acupressure pin passed under it, near spine of pelvis, and a silver wire looped over it, pressing the cord firmly against the pin; after which the testicle was exposed and removed by a division of the cord a short distance below the pin. Very little hemorrhage followed. The wound of the scrotum was closed by sutures, and the dry earth powder applied.

The specimen was referred to a committee, consisting of Dr. Tyson, C. T. Hunter, and Wharton Sinkler, which reported that they found the deposit to consist of two masses, each about four lines in diameter, and occupying the body of the testis or its proper secreting portion. These masses are separated by an interval about two lines wide.

Microscopic examination reveals, in addition to the small non-nucleated corpuscles, resembling the bodies usually described as tubercle corpuscles, a certain number of compound granule cells, and much free granular and globular oil. There seems to be in the deposit no traces of the tubular structure of the testicle.

There seems, therefore, but little doubt that this deposit is of the chronic inflammatory kind.

Dr. C. B. Nancrede presented for Dr. J. R. F Bell a specimen of *Cancer of the Pancreas*, and read the following history:—

The patient from whom it was removed, a man æt. 50, came to the Episcopal Hospital some time in September, 1869, complaining of pain in the left hypochondrium, with loss of flesh, strength, and appetite; also of vomiting, and that the ejecta were sometimes tinged with blood. On examination, a hard tumour, about the size of a walnut, was perceptible rather to the left of the epigastrium, which rose and fell with the movements of respiration at first, but later seemed fixed. This tumour he had first noticed in the previous March, and stated that then its position was higher up.

Pulsation could be distinctly felt, which remained unaltered by position, showing that the tumour was adherent to some vessel. There was also a bruit heard over this tumour, which was not propagated along the aorta, nor was there any thrill. This tumour was the seat of severe lancinating pain, not increased by the ingestion of food. Digestion remained good, and the man gained flesh, until some eighteen days before death, when nothing but stimuli could be taken. Until within a week of death, no diarrhœa was present, even when olive oil was given as a test. Fats were largely partaken of and relished by the patient.

During the last three months of life marked œdema, with occasional suppression of urine, occurred. There was a marked cachexia.

The post-mortem showed a large hard mass in the position of the pancreas, adherent to the liver, involving the stomach, in one position of which a marked inflammation and erosion were found. There was considerable ascitic fluid, rendered turbid by lymph.

The specimen was referred to a committee consisting of Drs. William Pepper, S. W. Gross, and Horace Williams, which reported that "upon making a section, the tissue of the tumour was found to be dry, not yielding any 'cancer-juice' on pressure, somewhat fibrous, but quite friable. Microscopic examination showed a scanty stroma in places consisting of delicate fibres, in others of long, fine, spindle-shaped cells. There were also very numerous oval and round cells, varying in size from less than that of a white corpuscle to double that size, and containing but a single nucleus. There were also many smaller nucleus-like bodies lying free among the cells. The tumour was far advanced in fatty degeneration; the cells contained dark granular matter or fine granular fat, and there was much free oil, with numerous large crystals of cholesterine."

Feb. 24. *Rheumatoid Arthritis; Eburnation.*—Dr. WILLARD presented the specimens and furnished the following history:—

These specimens were discovered while engaged as assistant demonstrator in the anatomical rooms of the University of Pennsylvania, and therefore are unaccompanied by previous history. They are the scapulæ and humeri. The head of the right humerus was found displaced from the glenoid cavity, and occupying a position upon the anterior inferior face of the neck of the scapula, where it had formed a new articulation; osseous tissue being thrown up about it in such abundance that the cavity was nearly as deep as the original glenoid. Glenoid cavity itself was filled with osseous deposit to such extent that but little of its former appearance remained, and the whole head and neck of scapula were greatly roughened with same growths. Coracoid process also somewhat implicated. The displacement of humerus had apparently been effected by a gradual absorption of the rim of the glenoid, and the subsequent deposit of this new bone had confined it in its abnormal position. On left side same changes had begun to take place, but had not yet reached such an advanced state, and humerus was not displaced, although glenoid cavity was excessively roughened. The head of humerus and inferior face of acromion presented a most beautiful specimen of eburnation, being polished to the utmost brilliancy. All articulations of the skeleton were similarly affected, in varying degrees.

Cystic Distension of Fallopian Tube.—Dr. WILLIAM PEPPER presented a uterus and appendages. The right Fallopian tube is healthy. The free extremity had become attached to the side of the uterus, and had become distended with clear watery fluid, so as to form a thin-walled cyst three inches in diameter. The Fallopian tube was also largely distended throughout its entire extent.

March 10. *Two Cases of Bony Deposit in the Eye.*—Dr. HARLAN presented the specimens, and read the following history:—

The first is from a patient operated upon at the Wills Ophthalmic

Hospital, and the following record was made of the case by the resident surgeon, Dr. Wilson: "S. S., female, æt. 46, applied for admission to the hospital September, 1869, suffering severely with pain in the left eye and sympathetic irritation of the right. States that, thirty years ago, the left eye began to fail after some inflammatory trouble (of which no definite account can be obtained). Five months afterwards, the sight of that eye was entirely gone; from this time, however, the eye gave her no trouble until three months ago, when, after using the other eye for some time in sewing by lamplight, the blind one began to be very painful and has troubled her constantly since. About three months before admission, the right eye began to fail. She noticed that it soon became fatigued with sewing or reading, and that it was very painful in a bright light, as sunlight, though not at all so when shaded. At the time of admission, she could not use her eye for small objects a minute without suffering a stinging sensation in it and intense pain in the other eye. The left eye was hard and somewhat atrophied, and the cornea opaque. No pain on pressure. Above the cornea, and slightly to the nasal side, there was a small sclerotic staphyloma."

The left eye was extirpated, with immediate relief from pain. I am unable to say how far she regained the use of the other eye, as the patient lived at a distance and left the hospital in a few days.

Dissection of Globe.—Sclerotic wrinkled from shrinking of contents, its structure apparently not altered. Cornea opaque and flat. Nothing remarkable in the appearance of choroid. Iris adherent to cornea; when separated from it, which is easily done, the membrane of Descemet follows it and is seen as a transparent curtain across the pupil. Lens of normal size, or perhaps rather large, yellowish-white, and as hard as a pebble. Hyaloid fossa lined with a firm tough membrane, having very much the appearance of cartilage. No remains of vitreous.

The retina having, as is usually found to be the case in atrophied bulbs, left the choroid and followed the shrinking vitreous, is recognized in shreds of tissue stretching from the optic nerve entrance to the ora serrata. Within the choroid, and nearly equal to it in extent, is a thin but firm bony shell, terminating anteriorly in a ragged edge, and deficient posteriorly at the position of the optic disk.

The other specimen is from a patient of Dr. Morton's, upon whom I assisted him to operate. The globe was extirpated on account of sympathetic irritation of the other eye. There was nothing unusual in the history of the case; it was one of long-continued inflammation. There was no opportunity for careful dissection. The bony formation in this case is a disk that occupied the fundus of the eye, extending to about one-third of the distance from the optic nerve entrance to the ora serrata. Like the other specimen, it lay immediately within the choroid, and is deficient at the point corresponding to the optic disk.

The following is the result of a microscopical examination made by Dr. W. W. Keen:—

CASE I. The bony development showed very distinct but imperfectly developed lacunæ, but no distinct Haversian canals were seen. The retina was much firmer than normal, but this is partly if not wholly due to the alcohol in which it has been kept. The main bulk of it was seen to consist of the atrophied bloodvessels, with some fibrous tissue and an enormous quantity of small oil globules. Quite a number of crystals of cholesterine were also seen. The lens consisted of an outer hard capsule and an inner friable mass, white and chalk-like. The latter was mostly carbonate of lime, as it effervesced with acids.. The outer capsule consisted of an indistinct granular substance, effervescing with acids, but possessing no true bone corpuscles. The choroid consisted almost wholly of fibrous tissue, with a few bloodvessels partly atrophied. The pigmentary layer had disappeared, save here and there a single cell.

CASE II. The bony portion showed very imperfectly developed lacunæ, but a number of well-developed Haversian canals. The retina was rather firmer than usual, probably owing in part to the alcohol. It consisted of a very few vessels, with a little fibrous and granular matter, and a large number of oil globules and multitudes of crystals of cholesterine, occurring both singly and in groups. Choroid as in the first case.

A number of similar formations are recorded, and there has been a good deal of discussion from time to time in regard to their nature, particularly in reference to the existence of Haversian canals. Mackenzie says, "They present traces of lacunæ under the microscope, but no Haversian canals." Stellwag speaks of "indications of Haversian canals" He says: "The ossification of these new formations begins from the external layers, while new connective tissue layers are placed on the inner surface." Virchow speaks very decidedly on the subject in the following extract which Dr. Keen has translated for me from the work on "Morbid Tumours:"—

"They are most frequent as small osteomata on the free surface of the choroid. They are mostly flat bones, which seem to lie on the vascular tunic, or to have taken the place of the retina, and therefore have often been described as ossifications of the retina. They generally lie in the posterior part of the eye; sometimes, however, stretching quite far forwards. They consist of good, firm, osseous tissue, moderately rich in vessels, proceeding, as a rule, from connective tissue, but sometimes from cartilage. That they are the result of chronic choroiditis is certain."

From their position next the choroid, and from the great difficulty, in many cases, of detecting any traces of the retina, it is not surprising that these formations have often been mistaken for ossifications of the retina; and, indeed, Stellwag says, that when any part of the degenerated retina remains in contact with the bony plate, it also becomes bony. If new layers of connective tissue are formed on the inner surface after the outer layers are ossified, it would seem that these bony plates are capable of independent growth. As they are among the recognized causes of sympathetic ophthalmia, it is worth while to bear in mind the possibility of their presence in deciding upon the operation to be performed. It is evident that not much could have been accomplished in either of these cases by any operation less thorough than that of extirpation of the globe. An interesting point in the history of the first case is the fact, that nearly thirty years intervened between the inflammation that destroyed the sight of the left eye and the appearance of sympathetic irritation of the right.

Suppression of the Urine; Jaundice.—Dr. HUTCHINSON presented the liver and kidneys of a man, æt. 40, who died in the Pennsylvania Hospital March 7, 1870. The following points of his history are of especial interest in connection with the disease of which he died: In the year 1860 he contracted gonorrhœa, which did not yield very readily to treatment, and seems to have given rise to a stricture of the urethra; for, on several occasions during the last seven years, catheterization has been resorted to to relieve his bladder of its contents. He has lived a roving life, but has never been excessively intemperate, nor has he ever had a chancre. On the 23d of February he found he was unable to pass his water, but does not appear to have sought medical assistance until the next day. It is not known whether or not the physician applied to succeeded in introducing a catheter into his bladder; but as no relief was obtained, he applied for and gained admission into the surgical wards of the Pennsylvania Hospital on the evening of February 24th. No difficulty was experienced in passing a catheter into the bladder; but as no urine flowed through it, percussion was performed over the hypogastric region, and the bladder found to be empty. Twelve hours later, ten fluidounces of a very dark-coloured liquid, which contained albumen, and under the microscope a large number of red blood corpuscles were passed naturally and without difficulty. The next evening jaundice supervened.

Feb. 27. The patient was transferred to the medical wards, and the following is from the notes taken at that time: "No urine has been passed since that above alluded to; percussion over the region of the bladder still gives a clear sound; the pulse is 82; the respirations slightly more frequent than in health; the tongue is covered with a dry and brownish coating; the teeth are incrusted with sordes; tenderness in the region of the gall-bladder; no increase or diminution of hepatic dulness; tympanitic resonance over abdomen. Patient is excessively restless, and throws himself about in bed while answering questions; he answers questions intelligently; complains of excessive thirst."

The treatment adopted consisted in the administration of diuretics and anodynes. The next day a small quantity of urine (not more than f℥iij) was passed. This was found to contain albumen, but did not show the presence of biliary colouring matter when tested with nitric acid. A systolic murmur was heard at base of heart to left of sternum. The patient not having had a passage from his bowels since he left the surgical ward, was ordered an injection, which brought away a large quantity of feces, which were not light-coloured. On the first of March three more ounces of urine were passed; incontrollable vomiting and hiccough were added to the other symptoms. A few observations of the temperature of the surface showed that this was low: the thermometer in the axilla on two occasions indicating 95°, and on another 97° Fahr.

The symptoms above detailed, with the exception of the secretion of urine, which became quite free on March 4th, gradually increased in severity, the vomiting being unchecked by all the remedies employed. Diarrhœa also supervened, so that the nutritious enemata, with which an attempt was made to nourish the patient, were rejected. There was at no time somnolence or tendency to stupour. The patient sank from asthenia on the morning of March 7th.

The autopsy was made the next day, twenty-four hours after death. The body was emaciated and the skin jaundiced; the head not examined. Chest: Lungs somewhat engorged at their posterior and lower parts, but were otherwise healthy; no pleural adhesions or effusion. The heart was healthy, with the exception of slight thickening of the mitral valves. Abdomen: Liver enlarged, engorged with blood, and deeply stained with bile; gall-bladder filled with viscid bile; kidneys enlarged, of a pale-yellow colour, presenting the gross appearances of chronic tubular nephritis. A stricture of the urethra was found in its membranous portion, and an abscess in one of the lobes of the prostate gland.

The microscopic examination was made by Dr. J. G. RICHARDSON, who found the evidences of the first stage of tubular nephritis. The straight portions of many tubes were choked with granular matter, which prevented the descent of the urine.

Dr. PEPPER said this case suggested to him that of a soldier belonging to one of the regiments passing through the city during the late war. He had a stricture of the urethra, and on reaching this city was seized with retention of urine. A physician practised forcible catheterization on a Sunday afternoon. This was followed by vomiting and complete suppression of urine. The medical man kept him at his house during the night, and on the next morning brought him in his carriage to the Pennsylvania Hospital. In a very short time he became intensely jaundiced, with symptoms leading to the diagnosis of an abscess of the liver. He remained in this condition, apparently dying, for two weeks, when he began to expectorate a purulent matter, which did not respond to Pettenkoffer's test, though it was thought to come from an hepatic abscess, which had discharged through the lungs. He slowly gained strength, and insisted upon proceeding homewards, although still very ill.

Cancer of Testicle.—Dr. ELLIOTT RICHARDSON presented the specimen, with the following history:—

W. S., æt. 40, married, farm labourer, native of Ireland, was admitted to the Pennsylvania Hospital Feb. 12th, 1870, with an enlargement of the left testicle, and of lymphatic glands in the groin of that side. Tumour was perfectly opaque, not painful to the touch, but at intervals he experienced a dull heavy pain. Skin of the scrotum distended, but not otherwise altered. No other tumours or enlarged glands than those mentioned were observed. According to the man's own statement he has been in this country seventeen years, and up to about the first of last May was in perfect health. At that time he first noticed an enlargement of the testicle, which enlargement increased rapidly for about a month, and afterwards slowly to the date of operation. He can give no account of cancerous or tuberculous disease having existed in his family. The testicle was removed by Dr. Agnew on Feb. 19, 1870, and with it the enlarged inguinal glands, two of which were completely broken down, forming abscesses.

Referred to Committee on Morbid Growths, which subsequently reported that the testicle was enormously enlarged, measuring 4½ inches long by 3½ inches wide. Its external surface presented numerous shaggy flocculi. Upon section, the tunica vaginalis was found greatly thickened. The cut surface of the testis presented an encephaloid appearance, consisting of patches of pure white interspersed with others of grayish, or pink colour, and separated by thin trabeculæ of fibrous tissue.

Microscopic examination of the cells from the whitish patches showed multitudes of small cells ($\frac{1}{1000}$ in. to $\frac{1}{1500}$ in. in their long diameter), oval, slightly angular, or even caudate in shape. These cells were in a state of marked fatty degeneration, so that in most instances the nuclei were concealed by the fat globules, while in other cells a single round nucleus, very large in proportion to the containing cell, was visible. In addition, much free fat and quite numerous very large granule cells and numerous plates of cholesterin were seen. In scrapings from the less degenerated, more reddish portions, the cells contained less fat and presented one, two, or, in some cases, three nuclei. They were of the same shape as those before described. In all parts of the gland the stroma was very delicate and scanty.

Caries of Vertebræ; Abscess opening into Lung.—Dr. HARLAN presented a specimen showing the sequel of a case he had reported to the Society a few months ago. The subject of it was a patient at the Children's Hospital, with curvature of the spine, who expectorated several small pieces of bone, one of which I showed, with a brief account of the case. The patient presented all the rational symptoms of phthisis, but, as the physical signs were wanting, I expressed the opinion that the harassing cough and profuse expectoration were due to an abscess connected with the diseased vertebræ, and opening into the lung. She died on Sunday last, and a *post-mortem* made the next day showed extensive old pleuritic adhesions on both sides, carious and calcareous bronchial glands, pus in the bronchial tubes, and slight congestion of the lungs, but not a trace of tubercular deposit. The lower part of the right lung was firmly adherent to the spine, and on tearing it away, an abscess the size of a small hen's egg was seen, formed partly in the lung and partly by a deep excavation in the vertebral column.

A number of small fragments of cancellated bone were found loose in the cavity of the abscess, and two such pieces may be seen imbedded in the consolidated lung tissue in the neighbourhood of its walls. I have removed the dorsal vertebræ, nearly all of which, I think, when cleaned, will be found to be more or less diseased. The body of the vertebra at the seat of the abscess (about the seventh dorsal) is entirely removed, and the spine at this point is bent at a right angle. There was never any paralysis.

March 24. *Excision of Knee-Joint.*—Dr. ASHHURST exhibited the specimens (condyles of femur, head of tibia, and patella) from a case of excision of the knee-joint. The patient, a boy of 10, had received an injury four years ago, for the results of which he had been successively treated in several hospitals. The knee was the seat of great deformity, contracted to an angle of about 120°, the tibia being dislocated backwards and upwards, and the patella fixed upon the external condyle; the joint was partially anchylosed, somewhat tender, and frequently painful. Excision was performed yesterday by a single curved incision over the joint, the articular surfaces being removed with Butcher's saw. The soft tissues of the joint were deeply congested, the cartilage ulcerated, and the bone partially eroded.[1]

Supposed Parasitic Body.—Dr. W. H. PANCOAST presented a specimen sent to him from Bangor, Maine, of which the following is the history:—

M. W., a woman aged 23 years, had a dry cough (occasionally paroxysmal), for a year or two. At the end of this time she threw up this cylindrical body, nearly ¼ inch in diameter, and one inch long, which had, at first, a cartilaginous feel, and was of a bright pink colour. After this the cough immediately disappeared.

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[1] The greater part of the wound healed by adhesion, and the patient is now (Aug. 18, 1870) quite well, with his leg firmly united at a slight angle, and able to walk without crutch, cane, or other assistance, and with no pain. The shortening is two and three-quarter inches, part of which, however, is due to a fracture of the thigh which occurred some years before the operation.

Referred to the Committee on Morbid Growths, which subsequently reported as follows :—

The object presented was about 1¼ inch long, wider at one end, which terminated abruptly and presented a concave surface, while it tapered gradually towards the other, which terminated in a blunt extremity. The larger end was about 2 lines wide, the smaller end about 1 line wide. The intervening shaft was uniformly about 1 line wide. The body was flattened, presented slight serrations on the edges as though from irregular shrinking from the action of the liquid in which it had been preserved. Its colour was of a dark brown approaching black.

On transverse section it presented a cellular structure, the cells appearing quite large, arranged circularly, with multiple nuclear-like bodies in their interior. There were also large opaque masses, apparently cells filled with pigment. On longitudinal section the cells were seen arranged with their long axes (which were from three to six times greater than their transverse diameters) parallel to each other. Otherwise they presented the same appearances as on transverse section. The only animal tissue to which the appearances presented any resemblance is cartilage ; but owing to the arrangement of the cells, it appeared to be of vegetable origin. The specimen was also, at the request of the committee, examined by Dr. H. C. Wood, Jr., who confirmed the view taken by them, and regarded the specimen as the stem of the frond of one of the fucoid algæ.

Abscess of the Brain ; Ulcerative Endocarditis ; Capillary Embolism of Kidneys and Spleen ; Cerebral Hemorrhage. Autopsy. Dr. WM. PEPPER presented the specimens and gave the following history :—

A. B., æt. 9, a vigorous, well-grown boy, struck his head violently in the neighbourhood of the right frontal protuberance. The child was stunned for a time, but did not actually lose consciousness ; he also vomited several times. There was a good deal of swelling and discoloration at the seat of injury, but this soon subsided, and in a few days the lad seemed as well as usual. He continued well for four months, during which time the only unusual feature about him observed by his family was occasional intense congestion of the face. This was developed by anger or exertion, and he was on one occasion observed to remain for some time with his head thrust out of a window. At the end of the four months he was attacked with obscure febrile symptoms, with heat of skin and acceleration of pulse. There were also moderately severe articular pains confined to joints of left extremities, and delirium, which was at first mild, but became more active. It was observed that he moved the left side of his body less readily than the right, but this was afterwards sufficiently accounted for by the articular pains. There was slight puffiness of the joints. A soft systolic mitral murmur was detected, and he evinced some uneasiness when the head was placed on præcordia. The febrile movement was somewhat irregular, but presented no marked remission. The urine was abundant, but could not be collected for more careful examination, as it was passed involuntarily. The surface was pale, and no eruption appeared. After a few days the condition of the mind changed to a state of more or less profound coma, which persisted till the day before death, when an abrupt remission in the fever occurred, attended by a free sweat, and soon followed by a return of intelligence, so that he recognized those about him. The following day he relapsed into a state of coma, and died about a week from appearance of the acute symptoms.

Autopsy twenty-four hours after death:—Head: Calvaria healthy, without any trace of previous fracture. There was a firm clot in one of the meningeal vessels, about under the seat of the former injury, and the meninges at this point were thickened. In cutting into the right hemisphere a cavity as large as a pigeon's egg was found in the anterior lobe, occupying the white substance between the antero-superior part of the corpus striatum and the cortical substance. Anteriorly, the wall of the cavity was formed only by a thin layer of cortical substance. The cavity was filled with a dark and chiefly fluid clot of blood. The walls presented no deposit of yellow pigment, but were discoloured, and here and there exhibited traces of chronic inflammatory action. The impression gained by a careful examination of the lesion was that there probably had been a small abscess in the substance of the brain at that point, and that a sudden hemorrhage had occurred into its cavity, enlarging it by laceration of surrounding tissue. The rest of the brain was entirely healthy.

Thorax: The *lungs* were healthy. The *heart* was of about the normal size, but on opening the left ventricle, the walls of this cavity presented a moderate degree of hypertrophy. The muscular tissue was firm, and, on microscopic examination, was found entirely healthy. There were evidences of old endocarditis in the shape of fibroid change in the tips of the papillary muscles; shortening, thickening, and some little coalescence of the chordæ tendineæ, and thickening of the free edge of the mitral valve. This thickening gave rise to a narrow ridge skirting the edge of the leaflets, but not surrounded by any vegetation. Microscopic examination of the structure of this thickened ridge showed it to be composed of quite dense fibrous tissue, with numerous small oval nuclei imbedded. There was also, however, on the posterior leaflet of the mitral valve, about $\frac{1}{3}$ in. from its free edge, a patch of ulceration ($\frac{1}{2}$ in. by $\frac{1}{6}$ in. in size), which had led to a perforation of the valve ($\frac{1}{3}$ in. by $\frac{1}{8}$ in. in size). The ulcerative disease had extended from the endocardium investing the valve to that covering the posterior wall of the ventricle at the line of the insertion of the affected leaflets, and here also there was destructive ulceration of the endocardium ($\frac{1}{3}$ in. in diameter), and superficial disintegration of the subjacent tissue. The aortic valves and those of the right side of the heart were healthy. The pericardium was healthy.

Abdomen: Liver congested but healthy. The *spleen* $\frac{1}{2}$ too large, presented at its inferior extremity a small collection ($\frac{1}{4}$ in. in diameter) of puruloid matter, evidently resulting from the advanced softening of an embolic patch. The *kidneys* were of normal size; their capsule thin and readily removed. Their external surface presented numerous minute elevations, each of which had a yellowish-white centre, surrounded by a narrow zone of deep congestion. On making a section of the organs their tissue was found to be quite thickly studded with similar minute patches, each one presenting the same pale, yellowish-white centre and surrounding zone of deep congestion. Softening had not yet appeared to any appreciable extent in the central portion of these patches.

Remarks.—The opportunity of describing and presenting these specimens is due to the courtesy of Prof. F. G. Smith, in whose practice the case occurred, and from whom the above clinical notes of the case were obtained.

The obscurity which surrounded the diagnosis is of course manifest. The entire disappearance of the symptoms caused by the blow seemed at first to withdraw attention from the brain. It is, however, interesting to note that during the four months which intervened between the injury and the final illness, the child presented frequent intense congestion of the head and face. I have on one other occasion observed this same phenomenon in a case of latent cerebral abscess. In the latter part of the case now under discussion, the supervention of coma, and the paresis of the left side, taken in conjunction with the previous injury, led to the diagnosis of disease in the right hemisphere of the brain. In carefully examining the lesion of the brain it will be seen that it presented evidences of both old disease and of recent hemorrhage. There can, indeed, I think, be little doubt that the clot occupying the cavity in the anterior lobe was quite recent, and possibly had formed at the time when the comatose symptoms appeared. It appears probable, further, that the antecedent disease was a small abscess, or circumscribed patch of softening, owing to the absence of any deposit of yellow pigment on the walls of the cavity.

The connection which this cerebral lesion had with the acute attack of ulcerative endocarditis, if, indeed, any such relation existed, is most obscure; and it appears more likely that the latter affection occurred by coincidence, as an idiopathic disease. The lesions in the left ventricle, above described (hypertrophy of its walls, fibroid thickening of the free edge of the mitral valve), show that, as usual, the attack of ulcerative endocarditis had been preceded by chronic disease of the heart. The seat of the ulceration and the characters of the lesion were such as are most generally found; the chief peculiarity about the case being the very unusual youth of the patient, since ulcerative endocarditis is far more frequent in adult life. It is, perhaps, impossible to obtain a clear idea of the symptoms due to the endocardial lesion in the present case, beyond the mere fact that there was a mitral murmur and some præcordial tenderness, since these symptoms were greatly masked and complicated by those of the cerebral disease.

In regard to the immediate cause of the large cerebral hemorrhage which occurred shortly before death, it would appear to be due to the disturbance of the cerebral circulation, caused by the cardiac disease, favoured by the previous disintegration of brain tissue at that point.

It is interesting to observe, further, that despite the very numerous minute emboli lodged in the kidneys, the urine remained free and clear throughout the attack. The last point of interest to which I would call attention in the history of this case is the sudden and marked return of consciousness within twenty-four hours of death, a phenomenon which appears explicable only on the supposition of a sudden diminution of the venous congestion of the nerve centres.

Dr. ASHHURST remarked that the absence of pulmonary lesion showed that the condition of the kidneys, etc., was directly connected with the state of the heart, and only secondarily dependent upon that of the brain. The sequence of events appeared to be, *first*, a traumatic lesion ("concussion") of the brain, followed by degeneration and softening of the cerebral structure; *secondly*, ulcerative endocarditis, which was an occasional strange rare sequence of head injuries, being usually associated with other pyæmic phenomena; *thirdly*, embolism of various viscera as a direct result of the condition of the heart; and *fourthly*, hemorrhage into the previously softened brain structure. The cerebral hemorrhage, therefore, though the immediate cause of death, was merely a coincident occurrence, not necessarily connected with the lesions found in other parts of the body.

Dr. W. PEPPER said, in answer to a question of the President, that he presumed the hemorrhage was in some way connected with a diseased condition of the vessels in the walls of the abscess.

It was perhaps quite possible that minute emboli had entered some of the cerebral vessels, but it could scarcely be supposed that the hemorrhage was in any wise due to collateral pressure following embolism. It would require a combination of coincidences scarcely conceivable if but a single embolus should have led to hemorrhage, and that one in this cavity.

Kidney referred to Committee on Morbid Growths, which subsequently presented the following report:—

Section of kidney structure in interval of embolic patches presented perfectly normal appearances:—

On cutting thin sections through one of the embolic patches, a small arterial vessel was seen leading to it, with its calibre entirely filled with opaque granular matter, so as to entirely obscure the transverse nuclei. The zone of congestion surrounding the central yellowish-white spots was highly opaque, owing to presence of granular matter and effused blood. The examination of the central spot itself showed it to be composed of renal cells closely aggregated, and in a state merely of granular change. No extensive softening had occurred, and no pus cells were seen.

Constrictions of Large Intestine from Peritoneal Adhesions.—Pyelitis and Cystitis.—Dr. DE F. WILLARD presented the specimens and said:—

They were taken from a cadaver in the anatomical rooms of the University of Pennsylvania, and are therefore utterly devoid of clinical history. Great omentum firmly adherent to whole of ascending colon and mesocolon, to gall-bladder, and to gastro-hepatic omentum. Abdominal contents otherwise healthy until reached commencement of descending colon, but from this point to anus were found numerous firm, white, inelastic bands constricting the intestine (which was itself otherwise healthy) at numerous points. One at the upper portion of the rectum compressed the bowel for about 4 inches, the bands arising from one side of mesorectum and passing over the intestine to be inserted into the other layer, thus encircling it like the clamps, which by their gradual contraction, had diminished the calibre to $\frac{1}{4}$ its former diameter. In left inguinal fossa lay from 2 to $2\frac{1}{2}$ feet of large intestine, dragged down by strong bands arising from sigmoid mesocolon and lateral parietal layer of peritoneum, and the whole extent constricted at numerous points to the size of the little finger, but wherever was not thus compressed was of normal calibre and healthy. Vermiform appendix also drawn over to sigmoid flexure. Only small amount of hardened feces found in tract. Kidneys mottled, cortex thinned, pelvis dilated, and partially filled with yellowish-brown pus. Ureters dilated and filled with dark brown material, a mixture of pus, blood, and broken down epithelium, as determined by microscope. Bladder very small; walls thickened; filled with chocolate-coloured substance of consistence of thin jelly, which revealed blood, pus, and mucous corpuscles with much disintegrated granular material. Mucous membrane showed long-standing cystitis. Spleen at lower portion presented a peculiar, whitish, fibrous deposit almost resembling cartilage.

April 14. *Gunshot Wounds of Abdominal Viscera.*—Dr. C. T. HUNTER presented the specimen, with the following history:—

P. W., æt. 32. Admitted into Pennsylvania Hospital, at 9.30 P. M., 6th April, for two gunshot wounds received about an hour before. On examination, I found a small gunshot wound in the walls of chest, at a point one inch to the right of median line, and one inch and a half below level of right nipple. I traced the course of this ball by means of Nélaton's probe, for a distance of six inches, directly downward in thoracic and abdominal parietes, but was unable to find the ball. The second wound was situated in abdominal walls, three and a half inches to the left of umbilicus, and one and a half inches above. Very little blood had escaped from either of these wounds. The symptoms of nervous depression were decided, but notwithstanding, patient retained consciousness till within a few moments of his death. Shortly after receiving these wounds, he began vomiting blood, and, at occasional intervals, continued to do so till 2 o'clock the following morning. The vomiting seemed to yield slowly to small lumps of ice, which were greedily swallowed by the patient, as his thirst was intense. Patient complained almost constantly of severe pains in left hypochondrium, and beneath left scapula. His breathing was regular but rapid and unattended with pain; no cough nor expectoration, nor was there at any time pneumothorax. At about 10 o'clock A. M. on the following day, patient passed about a half a pint of high-coloured urine; shortly afterwards he had a motion of his bowels; this consisted of a mass of feces, with fully a pint of very dark blood. For six or eight hours before death, the abdomen became distended with flatus, giving rise to considerable dyspnœa. The treatment consisted of opium suppositories, morphia in large quantities by hypodermic injections, with hot fomentations of water and laudanum to abdomen. Died at 4.30 P. M. on the 7th.

Autopsy twenty hours after death.—Rigor mortis, very feebly marked, abdomen distended and tympanitic. The bullet which had produced the wound in the chest walls was found in the sheath of the rectus muscle, between the muscle and peritoneum, a little below and to the right of the umbilicus, showing that the course of this ball had been almost directly downwards for a distance of fully fourteen inches in the walls of the chest and abdomen, without wounding the pleura or peritoneum.

Peritoneal sac filled with gas, bloody fluid, and recent blood clots. The latter were confined to the upper portion of the abdomen. The course of the lower wound through the abdominal parietes was upwards and inwards.

From the appearance of the wounds in the abdominal viscera, it would seem that the bullet entered the stomach through the fundus, emerging through the lesser curvature, wounding the lesser omentum, entering the stomach again through the lesser curvature, and finally passing out through the walls at the pyloric extremity a little below the pyloric opening. The wounds in the superior curvature were filled with firm coagula, which, probably, had the effect of arresting the hemorrhage from the anastomosing branches of the pyloric and cardiac vessels. The transverse mesocolon was perforated, the coats of the corresponding portion of the colon were grazed, and finally, the upper end of the jejunum was wounded at two points by the ball. It appeared to have been prevented from passing out through the back by having come in contact with the left transverse process of the first lumbar vertebra, which destroyed its force and turned it up through the diaphragm into the thorax, where it was found lying loose. The base of the left lung was slightly contused. The other abdominal organs escaped injury.

Stricture of Colon, with Ulceration and Perforation.—Dr. E. RICHARDSON presented the specimen, and read the following history:—

C. R., æt. 43, married, a native of Germany, after severe and long-continued exposure during a journey from Boston to this city on foot, was attacked about two weeks previous to my seeing her with violent vomiting, which lasted up to the time of her death. She had at the same time frequent discharges from the bowels, which consisted frequently of blood, and which continued for about a week, when they ceased, and about the same time the vomited matter became largely fecal. When I saw her she was in a collapsed condition, with scarcely a perceptible pulse at the wrist, cool skin, and the tongue presenting the raw-beef appearance. The abdomen was very largely distended and tympanitic. She could retain neither food nor medicine in the stomach, as vomiting was almost incessant, and when small quantities of food and stimulus were thrown into the rectum, they were immediately expelled, and followed on one occasion by a little blood. She died about eighteen hours after I first saw her, April 12th, 1870.

Post-mortem made sixteen hours after death, by Dr. C. T. Hunter and myself, exhibited, in addition to the appearances presented by the colon, which was greatly diseased throughout, slight discoloration of the small intestine, more marked in the duodenum about the mouth of the ductus com. choledochus; the gall-bladder was found to contain several calculi. The liver, spleen, and kidneys were apparently healthy, except that the latter were congested.

The colon was found to be perforated in the lower part of the sigmoid flexure; immediately below this is an incomplete stricture which seems to be the limit of disease in this direction, the rectum being normal.

Single Unsymmetrical Kidney; filled with Pus, and forming Abdominal Tumour.—Dr. DE F. WILLARD presented the specimen, and read the following:—

Mrs. ——, æt. 58 years, mother of four children, had enjoyed fair degree of health during life, although for many years had suffered with pain in right side of abdomen, and was unable to lie on right side. Still she never suspected any kidney trouble, and was considered a healthy woman; this one kidney doing its extra work without great difficulty. Fifteen or twenty years since, she was treated by Prof. Meigs for disease of uterus or appendages, and soon after by Dr. Goddard; ovarian disease being apparently suspected.

The exact time of appearance of this "tumour" is somewhat uncertain, yet she has suffered with pain in that region for many years. It is only within the past few months that she has experienced any difficulty in micturition, and this was attributed to pressure of the mass upon the neck of bladder. She affirmed that she had passed pus from her urethra, but she was not sufficiently ill to require medical attendance during this time.

Came under Dr. Rodman's care but a few weeks before death, at which time she was suffering much pain in region of tumour. This "tumour" was situated in right anterior lumbar region, extending into umbilical, and to right inguinal, and could be easily felt through abdominal walls, as an oval mass, somewhat nodulated. Stomach excessively irritable, refusing to yield to all treatment. Was seen in consultation by Prof. D. Hayes Agnew, and also by Dr. W. L. Atlee. Examination of urine by Dr. Hall gave the following result: Colour, pale and opaque; specific gravity, 1.008; alkaline—albumen $\frac{1}{8}$; microscopically, epithelial scales; small renal casts; crystals of oxalate of lime and triple phosphate. Presence of pus or blood not mentioned. Sank rapidly and died April 1, 1870, from exhaustion and with *no* symptoms of uræmia.

Autopsy, forty hours after death, by Dr. Willard, in presence of Prof. Agnew and Drs. Rodman and Atlee. Considerable quantity of fat in abdominal walls.

Peritoneal effusion but slight. No signs of peritonitis; some slight adhesion of omentum to mass, hereafter described. Lying in right lumbar, inguinal and umbilical regions, was a large mass presenting somewhat the appearance of a distended stomach. Its shape was oval or globular, presenting no characteristic appearance of a kidney, since it was deeply enveloped in surrounding fat and connective tissue; while the portion resembling a stomach was found to be the immensely dilated pelvis. Upon removal, the kidney was found to be enormously hypertrophied, its pelvis greatly dilated, and the whole structure apparently one immense sac of pus. Length, 11 inches; width, with pelvis, 9 inches. Weight, 33 ounces. Ureter, not dilated. No calculi save few "gravel" stones, of size of mustard seeds. There were two arteries and three veins.

Upon section the kidney showed, in the aggregate, a largely increased amount of renal structure on account of hypertrophy, although in many places it was entirely destroyed, and nothing more than the mere capsule remained; while in at least eighteen different portions were depots or excavations in the renal structure, extending nearly to surface, which were all connected with pelvis and all filled with pus. Pelvis dilated so as easily to admit of one's fist.

The cortical portion compared with pyramidal was in deficiency, but was really thicker than the normal non-hypertrophied condition of cortex. The whole structure was dark, congested, and much softened, and was decidedly unhealthy in appearance to the naked eye.

The contents of the sac, upon examination, were found to consist largely of pus. Sp. gr. 1.022. Addition of liq. potass. or ammon. rendered more viscid. Boiling coagulated a portion. Under microscope; pus and blood corpuscles, many of them disintegrated, and a few phosphatic (triple) crystals.

Renal casts could not be found, though they were carefully and repeatedly searched for; yet this may have been due to their disintegration, since it was several days after death before the examination was made.

At the superior portion of kidney was a true cyst, of the size of an English walnut, entirely unconnected with the central cavity, filled with true cystic fluid, which was almost entirely coagulable by heat. This cyst was honeycombed by delicate white partitions or bands. Left kidney entirely absent, no trace of it being discoverable in any part of abdomen.

Supra-renal capsule, ureter and renal vessels of left side all absent. Right ureter entered bladder very obliquely, and finally opened near median line. Slight dimple in mucous membrane at point of normal entrance of left ureter.

Bladder empty and healthy. Uterus and both ovaries perfectly healthy, as were other abdominal organs.

Brain and thoracic viscera not examined.

Referred to Committee on Morbid Growths. A committee, consisting of Drs. De F. Willard, Packard, and T. B. Reed, were also appointed to collect the cases recorded of solitary kidney.

Report of Committee on Morbid Growths.—The tissue was highly granular, apparently in part at least, from prolonged maceration. There were no traces of malignant disease.

Report of Committee appointed to Collect Cases reported of Solitary Kidney.—We have examined nearly all the prominent American and English publications, and present as a result the following cases in addition to those alluded to by Mosler in *Archiv. d. Heilkunde*, 1863, p. 290.

1. Absence of left kidney and ureter; male adult.—Dr. Burwell of Buffalo, N.Y., Am. Med.Journ. April 1847, p. 523. (From Buffalo Med. Journ. Dec. 1846.)
2. Absence of left kidney and ureter.—Labe, Am. Med. Journ., April, 1855, p. 490. (From Compte Rendu de la Soc. de Biologie.)
3. Absence of left kidney and ureter: capsule present; in a male infant still-born—right ureter opened on the left side of the bladder.—Förster, American Med. Journal, Oct. 1858, p. 511.
4. Absence of left kidney—capsule present; male adult.—Packard, American Med. Journal, April, 1862, p. 416.
5. Absence of left kidney and capsule; female æt. 53, uterus bifid.—Packard, American Med. Journal, July, 1863, p. 130.
6. Absence of left kidney—capsule present; male adult.—Thayer, Boston Medical and Surgical Journal, vol. iv. p. 11.
7. Absence of left kidney—capsule present.—S. Parkman, Dr. J. B. S. Jackson's Catalogue, p. 281.
8. Absence of right kidney—left renal capsule small, right much larger, in a monster.—Shattuck, Jackson's Catalogue, p. 239.
9. Absence of left kidney, 1 pelvis, 2 arteries, 3 ureters.—Hodge, Pennsylvania Hospital, Pathological Museum.
10. Left absent—right filled with calculus.—Dr. Hargadine, Phila. (Unpublished case.)
11. Absence of right. Supra-renal capsule and ureter present.—Ogle, Trans. Path. Soc. Lond., vol. iii. p. 382.
12. Absence of left kidney and ureter.—Murchison, Trans. Path. Soc., Lond., vol. x. p. 190.
13. Absence of left. Supra-renal capsule present, 3 arteries, 2 ureters.—Hillier, Trans. Path. Soc., Lond., vol. xv. p. 43.
14. Absence of left kidney and ureter.—Bruce, Trans. Path. Soc., Lond., vol. xvii. p. 175.
15. Absence of left; 2 ureters, opening separately, 3 arteries, 3 veins; right kidney weighed 93 oz.—Johnson, Trans. Path. Soc., Lond., vol. xix. p. 274.
16. Absence of left; 1 artery.—Lancet, 1863, ii. p. 622.
17. Absence of left.—Garrod, Lancet, 1863, ii. p. 724.
18. Absence of right; supra-renal capsule present; artery and veins absent.—Lancet, 1866, ii. p. 251.
19. Absence of left kidney and ureter.—Spooner, Lancet, 1868, p. 530.
20. Absence of right; supra-renal capsule absent.—Army Med. Museum, Fort Pitt, Chatham.
21. Absence of left, also of ureter.—Army Med. Museum, Fort Pitt, Chatham.
22. St. Thomas' Hospital, No. 1058.
23. St. Thomas' Hospital, No. 1059.
24. No. 2026,[10] (Guy's Hosp. Museum,) supra-renal capsule present.—Wilks Path. Anat., p. 355.

25. No. 2026,[20] (Guy's Hosp. Museum.) implied that supra-renal capsule was not present.—Wilks' Path. Anat., p. 355.

Doubtful Cases—not definitely stated whether any other kidney present or not.

Case 1. Kidney situated on sacrum, 2 arteries, 1 vein.—Army Medical Museum, Fort Pitt, Chatham.

Case 2. Kidney situated on sacrum, 3 arteries, 3 veins.—Ibid.

Case 3. Kidney situated at bifurcation of aorta, 3 ureters uniting into one, 4 arteries.—Gay, London Pathological Society's Reports, vol. iii. p. 116.

Case 4. Kidney situated as above, 2 ureters uniting into one.—Thompson, London Pathological Society's Reports, vol. vi. p. 267.

Kidney had probably existed at some time.

Case 5. Right kidney mere rudiment, ureter turned upon itself not entering bladder—vessels wanting.—London Pathological Society's Reports, vol. i. p. 293

Case 6. Left ureter atrophied and impervious, terminating in a cyst size of pigeon's egg, containing a dark syrupy fluid, and some cholesterine; no kidney structure; male adult.—New York Hospital Catalogue, No. 744, p. 295.

Case 7. Right kidney only sac. fœtus; other kidney malformed.—Hicks, London Pathological Society's Reports, vol. xvii. p. 177.

Case 8. Left atrophied to a drachm, but showed Malpighian bodies. Ureter impervious.—Jones, Lond. Path. Soc. Reports, vol. viii. p. 279.

The committee would therefore present these twenty-five undoubted cases in addition to the fourteen of Mosler, before alluded to, making in the aggregate thirty-nine cases collected by them. In addition to these there are eight cases in which a certain amount of doubt exists, and which have, therefore, been separately tabulated. Of the twenty-five undoubted cases, the left was absent in seventeen instances, the right in four; five cases are uncertain, while in Mosler's cases the deformity was found about equally upon the two sides.

The committee would especially call the attention of the members of the Society to the fact that the supra-renal capsule is found present at times, even when the kidney is entirely absent, thus showing a distinct character.

Horse-shoe kidneys not collected.

Dr. PACKARD presented for Dr. F. H. GETCHELL, a *fibroid tumour of the uterus*, which was partially removed by administration of ergot. The removal was completed by combined traction from below and pressure from above. The patient was 27 years old, was married twelve years, and had four children by a previous husband. Profuse hemorrhages occurred eighteen months ago.

May 12. *Testicle* (*left*) *from Mr. X.*, *æt.* 55. Dr. PACKARD presented the specimen and gave the following account:—

Mr. X. was first seen by me in 1867. He then had a hydrocele on the left side, about as large as an orange. He had had a blow on the part the year before. April 12, 1870, drew off about f℥iv of clear liquid.

May 10. Castration.—First evacuated the liquid from a sac, clear, no spermatozoids. The remaining contents of the left side of the scrotum were then removed in the usual way. Acupressure applied to the vessels of the cord. Four points of lead wire suture. Testicle atrophied. There had evidently been a hæmatocele. Was this a hydrocele of the cord, complicated with a hæmatocele in the tunica vaginalis?

May 26th. Mammary Cancer.—Dr. JOHN ASHHURST, Jr., exhibited a specimen of mammary cancer, removed by him, from a patient 54 years of age. The tumour, which occupied the left breast, had appeared five months previously, after the reception of a severe blow upon the part. It was very hard to the touch, the skin being adherent, dimpled, and slightly lardaceous; there was no adhesion to the pectoral muscle, and no enlargement of the neighbouring glands. The tumour was painful, and rapidly enlarging; there was occasionally a sanious discharge from the nipple. Excision was effected by elliptical incisions, embracing the nipple and adherent portion of skin, the whole breast being removed; the wound healed by adhesion. Section of the tumour laid open a collection of bloody puriform matter, which apparently resulted from degeneration of the cancerous structure, and which communicated with the excretory ducts of the nipple. Dr. Ashhurst requested that the specimen should be referred for examination to the Committee on Morbid Growths, which committee reported that scrapings from the cut surface showed a large amount of free fat; the cells were, for the most part, rounded, granular, and fatty, with imperfectly formed nuclei; others were larger, more angular, and epithelial in appearance, and contained large single nuclei. There were also a few mother cells, containing two or three included cells. The stroma, which was lax but markedly fibrous, showed circling and intersecting bands of fibrous tissue, inclosing groups of the above described cells.

Chronic Pleurisy; Paracentesis Thoracis.—Dr. W. W. KEEN presented the specimens, and read the following history:—

D. R., æt. 23, gilder, healthy till July, 1869, when he took cold, but was not confined to bed. Health continued poor till December, when he became worse with cough, night-sweats, dyspnœa, and great weakness. He first came under my care Feb. 21, 1870.

He was so weak that he could barely sit up in bed, suffered greatly from cough, with yellowish-white sputa. Pulse 120, and very weak. Respiration 42. On the left side, anteriorly and posteriorly, there was dulness from the clavicle to a level with the umbilicus, but just under the clavicle the dulness was not complete. The right chest was impaired in its resonance. The lower border of the liver was almost at a level with the ilium. The heart's apex beat was one inch below and half an inch inside of the right nipple. At the left apex, anteriorly, a few râles were heard, but no sound whatever anywhere else; posteriorly, a few dry râles and bronchial breathing down to the middle of the lung. The respiration on the right side was puerile. The heart sounds normal, but displaced.

The left side was evidently distended, especially anteriorly and laterally; the intercostal spaces effaced rather than bulging. Posteriorly they were visible. The entire left chest moved but little with the respiratory act. Vocal fremitus was out of the question, as his voice had been reduced to a whisper for two months. Thinking that possibly the displacement of the heart had stretched the left recurrent laryngeal nerve, and so produced the aphonia, I examined the larynx. His throat was so irritable that I was only able to satisfy myself that there was no paralysis of the muscles of the left vocal chord. Treatment: potass. iodid., cod-liver oil, milk-punch, beef-tea, and morphia, *pro re nata*.

Feb. 25. In order to make the diagnosis of chronic pleuritic effusion positive I introduced the hypodermic syringe point, and, making suction, obtained a half ounce of opaline yellowish fluid, coagulable by heat and nitric acid. His respiration was so much embarrassed that paracentesis thoracis was determined on.

26*th*. Dyspnœa greatly increased; respiration 65; pulse 142. The smallest trocar of Bowditch's apparatus (see *American Journal of the Medical Sciences*, April, 1852, and Jan. 1863) was introduced at the upper border of the tenth rib, a little in front of a line from the angle of the scapula. Half a gallon of fluid was drawn off, when no more fluid would flow. His respiration fell to 40, and his pulse to 128, and, by evening, to 33 and 120 respectively. The heart beat was nearly at the median line, and the area of respiratory murmur was slightly increased. The fluid showed nothing by the microscope save some unrecognizable fragments. On standing 24 hours a gelatinous transparent coagulum formed, which in part floated on the surface.

March 1. Respiration 29; pulse 112, but weaker. He has been able to lie on the right side for several hours with comfort.

5*th*. While greatly relieved by the operation he is sinking gradually. Pulse 130, respiration 33.

8*th*. Died at 12 M.

10*th*. Sectio cadaveris at 12 M. Body very much emaciated. Left intercostal spaces anteriorly obliterated. Puncture of operation healed.

Thorax. On removing the sternum the heart lay over to the right side, the apex to the right border of the sternum. The *right lung* was studded with small tubercles, rather scantily below but pretty thickly at the apex. It was bound to the parietes of the chest by tolerably firm pleuritic bands. The *left lung* was nowhere to be seen. The pleura was $\frac{3}{16}$ inch in thickness in its visceral layer, and $\frac{1}{16}$ in its parietal layer. The whole cavity was divided into a large number of loculi by fibrinous septa, extending across it in various directions, thin, transparent, and very easily torn. The cavity contained 3½ pints of the same kind of fluid evacuated at the operation. The point of puncture was seen as a small slightly reddened spot. The left lung was found lying behind the pleura at the upper and posterior part of the chest. About one-half of it was simply compressed, and the other half tubercular. The *heart* was normal. Both ventricles contained clots; that in the right, or pulmonary side, of large size, adherent, extending into the auricle, and almost wholly fibrinous; that of the left side, small, loose, and only partly fibrinous.

Abdomen. The *liver* was enlarged, especially its left lobe; was fatty, an admirable specimen of a "nutmeg" liver, and extended far over to the left side, and down to a level with the umbilicus. *Kidneys* and other abdominal organs healthy.

June 9. *Medullary Carcinoma of Antrum.*—Dr. MEARS presented the greater portion of the left superior maxilla which had been removed by Dr. W. L. Atlee for disease involving the antrum.

The following is the history of the case:—

R. A., æt. 53, native of England, occupation cattle-drover, has always led an active out-door life, and enjoyed the best health. Two months and a half since, on his return home from a visit to the West, during which he was exposed to many hardships, he experienced pain in the left temporal region, extending down to the upper jaw, and felt most distinctly over the site of the antrum. The pain was severe and lancinating, and was thought to be due to neuralgia. Subsequently, the three molar teeth were extracted, under the belief that the pain was due to some disease of the nerves connected with these teeth. Soon after the extraction of the teeth he felt a tumour projecting into his mouth. This tumour increased in size very rapidly, encroaching upon the cavity of the orbit of the eye to such an extent as to produce very marked exophthalmia. The rapidity of growth of the tumour clearly indicates its malignant character. It possesses the gross appearances of infiltrated medullary carcinoma. The tumour was referred to the Committee on Morbid Growths, which reported that the tissue presented very numerous cells of rounded shape, varying greatly in size, and containing one, two, or even four comparatively large nuclei. The cell contents were markedly granular, and in some instances mixed with fatty granules. There was in addition much free oil, and occasional small plates of cholesterin. A few compound granule cells were also seen. The tumour appears, therefore, to be of an encephaloid nature.

Phthisis diagnosticated by aid of the Microscopic Examination of the Sputa.

Dr. Hutchinson exhibited the specimens, and said they were taken from the body of a young man, aged 19 years, who was admitted into the Pennsylvania Hospital February 17th, 1870. The lad was a sailor, said to have had no hereditary predisposition to phthisis, and to have been suffering for four weeks with his present illness, which had begun as an ordinary cold, but was now thought to be a fever. On admission, there was marked mental hebetude, decided heat of skin, increased frequency of pulse and of respiration, and occasional cough with scanty expectoration, but no diarrhœa, no tympany, no rose-coloured spots or other eruption, no epistaxis, and only a slight coating of the tongue. Careful physical examinations made at various times and by different physicians did not lead to the detection of tuberculous disease of the lungs, although this was suspected. Thermometric observations made daily for five weeks showed that the temperature of the body was abnormally high, as it was never found to be below 101°, and was frequently 104°. On a few consecutive days the thermometer would indicate the latter temperature, but this was by no means the rule, and there was at no time anything like a gradual rise or fall of temperature noted.

Failing to detect by means of physical examination disease of the lungs, to which this long-continued elevation of the temperature, as well as some of the general symptoms pointed, I requested Dr. J. G. Richardson, microscopist to the hospital, to examine the sputa of the patient, after they had been treated as recommended by Fenwick, by adding a solution of caustic soda and boiling, and on the 14th of March I received a reply to the effect that the very scanty expectoration contained a very large quantity of yellow elastic tissue. A week later dulness on percussion and some harshness of the respiratory murmur was detected in the left superior scapular region, and these signs soon gave place, not merely in this region, but in others, to those of softening. The thermometric observations taken from time to time, always indicated an elevation of temperature. In April there were symptoms of tubercular meningitis, but these afterwards disappeared, and did not again recur. On the 8th of April the patient complained of intense pain in his abdomen, which was somewhat increased by pressure. This pain caused the patient to draw up his lower extremities, and to bend forward his body so as to relax the abdominal walls—a position which suggested peritonitis, but there was no other evidence of its existence. The pain continued until the time of his death, but was always moderated by the administration of opium.

Death took place June 4th. The autopsy was made the next day, 30 hours after death.

There was a good deal of serous effusion beneath the membranes and in the ventricles of the brain, but no evidence of tubercular or other inflammation of the membranes or of the brain itself. The bronchial glands were enormously enlarged. At the apices of both lungs were numerous small excavations; the remainder of both lungs was studded with tubercles. The mesenteric glands were also much enlarged, and the intestines were the seat of tuberculous ulceration.

Cystic Sarcoma of Breast.—Dr. S. ASHHURST presented the specimen and history.

Miss —— aged 63, single, noticed about May 1, 1870, a slight lump in the right breast, accompanied with a little discharge from the nipple. She applied some domestic remedies until June 2d, when she sought medical advice. There was then retraction of the nipple and a very prominent tumour above it, in which existed marked fluctuation. An exploratory puncture was made, which gave exit to a little honey-like fluid and blood. A similar discharge issued from the nipple. Dr. J. Cheston Morris was called in, with whom I saw the case in consultation, on June 4th. The general condition was one of exceptionably perfect health. There was very slight pricking pain in the breast. The skin was much congested. There was very slight discharge from the nipple and the puncture of the 2d instant. There was no appreciable enlargement of the axillary or supra-clavicular glands. There were no large veins on the surface of the breast. The tumour was freely movable under the skin and upon the pectoral muscle, of firm but not stony consistence. The growth was removed by Dr. Morris upon the 7th instant. The tumour was referred to the Committee on Morbid Growths.

Report of Committee.—The tumour had been soaked in spirit. The specimen presented marked retraction of the nipple and discoloration of the skin over the most prominent part. The tumour was about 1½ inch in diameter. Its periphery was hard and fibroid, while the central parts were soft, friable, and, in some places, even pultaceous. All parts of the mass gave exit to a milky fluid on pressure.

The cells in the softer parts of the mass were large, rounded, with markedly granular contents, with one, or in rare cases, two nuclei, which were large in comparison with the containing cells. There was no longer any trace of cystic disease.

The tumour would then appear to be a cystic sarcoma.

Extensive Ulcerative Disease of the Large Intestine.—Dr. TYSON exhibited the entire large intestine with a portion of the small bowel, and remarked as follows:—

R. T., aged 28, was quite well previous to March 1st, 1869, when, after exposure to cold, was seized with what appeared to be true dysentery, since the attack was characterized by stools of blood and mucus attended by much tenesmus. This continued more or less interruptedly until about

June 1st following, when he again considered himself well, and was attending to business. Early in June, however, he ate freely of strawberries, and immediately the symptoms returned. He seems to have been treated by opiates and astringents, with varying results; at times he was comparatively comfortable, but the discharge of blood and mucus continued more or less uninterruptedly. In November, his medical adviser instituted treatment by cauterization of the rectum, with apparent good results. He continued, however, losing strength, and finally gave up all attention to business. Towards the close of 1869, he was for a short time under "Thomsonian" practice, but from January 1st to May 23d was under the care of a homœopath, during which time he grew gradually worse.

May 24, when I assumed charge, he presented the following condition: Much emaciated, skin dry and harsh, pulse 107; more or less constantly a mixture of blood and mucus passes from rectum without any effort of patient. In addition, there are from six to twelve evacuations in twenty-four hours, of the same elements, occasionally mingled with fecal matter. Marked œdema of feet, legs, and thighs exists; also ascites, abdomen measuring 32½ inches at umbilicus. In recumbent position, dorsal decubitus, the right lung is markedly resonant anteriorly as far as sixth rib, where is met the upper edge of the liver, somewhat pushed up by abdominal effusion; resonance in right axilla to same point. On left side anteriorly, resonance to fifth rib, where dulness of heart commences, soon to be replaced by downward gastric tympany. In left axilla, dulness extends nearly to lower border of ribs, where tympany of distended and displaced stomach begins. On sitting up, physical signs on right side remain unaltered. On left side line of dulness in axilla descends to eighth rib, while vocal fremitus is also diminished in this situation—phenomena no doubt due to liquid in left pleural cavity.

The patient responded but feebly to general restorative treatment, and local astringent (sulphate of copper) solutions to rectum, for twelve days, but on the thirteenth day after coming under my notice, he began rapidly to sink, and died in about twelve hours less than two weeks after I first saw him.

Post-mortem four hours after death.—No peculiarities of surface. At least four quarts of effused serum were taken from abdominal cavity, about two quarts from left pleural cavity, and a very small quantity, an ounce or two, from the right. The viscera were all markedly blanched and transparent. The entire large intestine was removed, and found to be in the condition presented by the specimen, in a state of continuous ulceration from the sphincter muscle to the ileo-cœcal valve (the ulcers being everywhere deep and excavating, but in no instance perforating). As is also noticed, the Peyerean patches and solitary glands to the distance of twelve inches above the valve are also ulcerated, but beyond this the bowel is healthy.

The presence of the bluish stain indicates how short a distance the injections administered in the ordinary way ascended the bowel, not more than four inches above the sphincter muscle; proving also the absolute necessity of using some means other than those usually employed, of throwing solutions into the lower bowel, if it be desired to reach a point more than four inches from the anus. In this case the inroads of the disease had been so long unresisted, and condition of the patient so utterly beyond hope, that little was expected from general or local treatment

Encephaloid of the Testicle.—Dr. S. W. GROSS exhibited an encephaloid cancer of the left testicle, removed on the 26th of May from a strong, muscular gentleman, thirty-two years of age, in whom there was no history of cancerous or syphilitic taint. He had noticed from his earliest youth that the gland was larger and harder than its fellow, and at the age of eighteen years—the testicle gradually increasing in the interval—he began to wear a suspensory bandage, on account of severe, intermittent pain in the cord. In April, 1869, he received an accidental blow on the part, and in the following October, when the organ was about one-third the size of the mass at the time of its extirpation, it commenced to grow rapidly without any signs of inflammation. Within the past few months, it had been the seat of great pain on pressure at a spot at its upper and anterior limits. From the outset the organ had been equably enlarged, without any unevenness of surface. It had a uniform, full, firm, and dense feel, without elasticity or apparent fluctuation at any point. The integuments of the scrotum were sound and unadherent, and there was no enlargement of the superficial veins. The cord was large from a varicose state of its vessels, but appeared healthy in other respects. There was no evident enlargement of the inguinal or lumbar lymphatic glands, nor was there any fluid in the sac of the tunica vaginalis. After removal, the tumour was found to be oval, somewhat flattened from side to side, eight inches and a half in its transverse circumference, by ten inches and a half in its vertical, while its weight was ten ounces. The veins of the cord were varicose and enlarged, but the cord was otherwise healthy. On section, the mass resembled hardened brain-tissue, with, here and there, points of linear injection. By scraping, a creamy juice exuded, which showed, microscopically, innumerable large free nuclei and granular cells, a few of which possessed dot-like nuclei.

Dr. C. B. NANCREDE presented, for Dr. A. G. HEYL, a specimen of *tumour within the spinal meninges*, with the following history:—

Wm. F——, æt. 20, unmarried, blacksmith's apprentice, admitted May 16, 1870, to the male medical ward of the Episcopal Hospital. Three weeks previous he had received a severe wetting during a heavy storm, and neglected to change his garments. One week subsequent to this, while in the act of lifting some heavy cart-wheels, he was seized with a violent pain in the lumbar region, which was, apparently, the commencement of his illness. The first week after this occurrence was marked by slight difficulty of micturition and locomotion. During the second week complete retention of urine obtained, and also paralysis of motion and sensation.

On admission there was complete inability to use the muscles of the lower extremities; skin hot; pulse frequent; tongue dry and red; anorexia; no movement of bowels for a week. Mind perfectly clear; special senses intact. Urine, when drawn off by catheter, was turbid, showing, on microscopical examination, an abundance of pus. A large sloughing bedsore occupied the upper portions of both buttocks, and also marked œdema on the dorsal aspects of both feet. All the muscles of the lower extremities responded feebly to electric current. Hyperæsthesia over surface of the trunk. Temperature high throughout, reaching its maximum, 105°, on the fifth day after admission, ranging from this to 101°. Pulse frequent, rather strong, ranging from 112 to 124. No spasms or convulsions, although reflex contractions could be readily excited. Towards the close of the disease, muscular tremour was observed.

Three days preceding death slight hebetude was observed, with a tendency on the following day to delirium, which was followed by subsultus tendinum, and rapid, laboured breathing. Coma supervened twenty-four hours before the fatal termination.

Post-mortem examination, twelve hours after death, revealed tuberculous deposit in the lungs, principally at the apices of the lungs, with a small cavity in one; also hypostatic congestion; liver healthy; spleen much enlarged; kidneys slightly congested; bladder normal. On removing the calvarium, the meninges showed marked congestion; but neither serum nor lymph. Slight congestion of brain-substance; no serum in ventricles. Spinal meninges much congested; opposite the lowest dorsal and uppermost lumbar vertebræ an oblong white mass was found, about an inch in length.

Referred to Committee on Morbid Growths, which reported as follows:—

The spinal cord had been hardened in alcohol. Sections of the cord were made at short intervals throughout its length. Down to the middle of the dorsal region the structure of the cord was apparently entirely healthy, and symmetrical in all its parts. Below this point there was apparently a slight difference in the size of the posterior horns of gray matter, in favour of the right side. No positive difference between the corresponding portions of the white matter of the cord could be detected. The consistence of the cord varied somewhat in different portions. Excepting at the point of the morbid growth, it was quite firm; at this latter part, however, the consistence was diminished.

Microscopic examination showed a healthy condition of the nerve-tissue, excepting for a short distance corresponding to the morbid growth, where it presented abundant granular fat and some granule-cells.

The morbid growth was found to lie exterior to the dura mater; it was closely apposed to this membrane, and moderately adherent to it, though it could be completely separated by slight force. Its outer surface was closely moulded to the interior of the spinal column. The structure of the mass was densely fibroid, with but occasional patches of rounded granular nucleated cells, and therefore appeared to be either an organized blood-clot or a layer of organized lymph.

Sept. 8. *Tumour of the Right Ovary.*—Dr. J. E. MEARS presented the specimen, and gave the following history of the case occurring in the practice of Dr. W. L. Atlee:—

L. J., æt. 25, unmarried, was awakened during the night of March 26, 1870, by a severe cramp pain in the right iliac region, which continued and prevented her from engaging in her usual duties on the next day. Her physician treated the attack as one of congestion of the liver. After four weeks' confinement to bed, she was able to go out, but found on dressing herself that her clothes would not meet by two and a half inches. During eleven weeks following, she increased in girth twelve inches. Becoming dissatisfied, she consulted a female physician, who treated her for enlargement of the liver and spleen. Dr. Littell was subsequently called to take charge of the case, and making a correct diagnosis advised the patient to consult Dr. W. L. Atlee.

At that time her condition was as follows: Abdomen enlarged to a size greater than that of a woman at full period of gestation—quite uniform, and generally hard and unyielding; at different points elastic portions are distinguished resembling superficial small flat cysts; no fluctuation; pelvis free; hymen intact; os uteri central, and uterus movable; the sound enters 2½ inches, and ascends back of the tumour. Measurement round waist 32 inches; round umbilicus 42; from sternum to umbilicus 14; from sternum to pubes 20; from right superior spinous process to linea alba 9½; between spinous processes 20 inches.

Prostration extreme; pulse very feeble and rapid; respiration short and frequent; anorexia; bowels disposed to looseness, and sleep is obtained only through the influence of anodynes.

Diagnosis.—Multilocular ovarian tumour.

July 12th. Paracentesis abdominis was performed, evacuating about six pints of a dark-coloured albuminous fluid; this quantity was obtained by varying the direction of the trocar, and tapping several cysts. Temporary relief was afforded by the tapping. Tongue became red; stomach rejected everything, and there was great restlessness and loss of sleep; pulse exceedingly small; skin relaxed, and respiration more oppressed. Abdomen becoming more distended and very tense, tapping was again performed August 13th, removing only two and a half pints of purulent-looking fluid. Symptoms of septicæmia continuing, the patient died August 22d, 1870.

August 23d. Sectio-cadaveris performed by Dr. Mears; Drs. W. L. Atlee, W. Lemuel Atlee, and John P. Bethell being present. Body extremely emaciated. Lower extremities œdematous. On opening the abdominal cavity the tumour was found firmly adherent to the parietes; surface of tumour occupied by exogenous cysts, the walls of which were quite fragile, breaking down in the attempt to separate the adhesions. These cysts contained a thick, dark-grayish fluid, with free pulpy masses. The tumour consisted of the right ovary, and was multilocular; uterus normal, and with the left ovary was removed, attached to the tumour; left ovary somewhat enlarged and congested; liver and spleen normal. Other organs not examined. Referred to Committee on Morbid Growths, which reported as follows:—

Report of Committee on Morbid Growths.—Mass presented no true stroma, being composed exclusively of cells, of very varying size and shape. Many of them resembled pavement epithelium; others columnar epithelium, while there were in addition a large variety of cells of oval, spherical, or spindle-shape. For the most part these cells contained a single large nucleus. Your committee regard this as a malignant intracystic growth of the ovary, of the nature of encephaloid carcinoma. On section the mass yielded quite abundant milky fluid, exuding on pressure from a lax, vascular stroma. This fluid abounded in cells, mostly rounded, and of size of gland elements, though there were others much larger. Many of these cells were advanced in fatty degeneration. For the most part, the cells contained a single nucleus.

October 14. Fibrous Tumours.—Dr. C. H. BURNETT presented *two* of these, removed by him from the ears of a negress, aged 28. They were situated on the lobes of the ears, and were eight years in attaining their growth. Their size was not symmetrical, the one on the right being twice as large as that on the left ear. The history showed that at the age of nineteen the woman had repeatedly pierced the lobes for the purpose of wearing ear-rings, and had kept the holes in a constant state of irritation by inserting into them broom fibres, straws, etc., and although the rings were of gold and had never cut through, the growths had speedily followed the application of the above-mentioned irritants. At the time of the removal of the tumours their conjoined weight was 260 grains Troy.

Their minute structure was that of exceedingly dense white fibrous tissue, with some fibres of elastic tissue. No history of any morbid growth whatever in the family could be elicited. In fact this case seems to confirm the statement made by Tröltsch in his work on the ear, that these tumours are due to the improper treatment of the pierced lobes, and that they are usually found in negresses, more frequently in the Antilles, where the ornament worn is large and of brass. However, such growths have been constantly observed in this city, and their nature proven to be recurrent but not malignant.

Dr. W. PEPPER referred to the tendency exhibited by these tumours to recur, often twice and three times, presenting each time the same dense fibrous structure. He did not know an instance of a recurrent tumour so entirely innocent as these. He had seen five or six cases, and all were in negresses.

Severe Compound Fracture of Arm from a Slight Fall; Amputation; Recovery.—Dr. PACKARD related the following case, and showed the specimen:—

George D., æt. 8, June 13, 1870, while standing on a low paling fence, slipped off; in falling his sleeve caught and jerked him backwards. He was brought to town, losing a good deal of blood. At about 3 P.M. I saw him, at the request of Dr. J. F. Meigs.

About an inch and a half of the humerus was protruding through a wound in the skin, a little to the inner side of the median line in front of the arm. The forearm and hand were cold, and there was no pulsation at the wrist. I called Dr. Agnew in further consultation, and we decided to amputate, which I did by anterior and posterior flaps, Dr. W. Sinkler giving the boy ether. The stump did perfectly well, although the ligatures were not all away until Aug. 27, *seventy-five days* after the operation.

On examination of the limb we found a transverse fracture of the shaft an inch or more above the elbow, and a fissure running down almost into the joint. The brachial artery had been torn across by the forcing forwards of the lower end of the upper fragment. It is very rare to see so severe an injury as the result of so slight a fall.

Oct. 27. Tumour of the Head of the Pancreas.—Dr. WM. PEPPER presented the specimen, and said:—

John Honan, æt. 45, of very intemperate habits, first noticed hemorrhage from the bowels in early part of 1870. This recurred quite frequently, and on July 22, 1870, he had profuse vomiting of blood, followed by the passage of altered blood by stool. Two weeks later he vomited blood a second time; and on August 23 there was such rapid hemorrhage into the stomach and bowels as to prove fatal in about one hour. Throughout the attack the bowels had been habitually costive, but the stools were apparently normal; appetite was fair, and no vomiting occurred except at the times above mentioned. The area of hepatic dulness was moderately diminished, but there was no chronic gastric catarrh, no ascites, and no enlargement of cutaneous abdominal veins. There was no tumour detectable in the abdomen. The urine was not albuminous. Neither polyp nor hæmorrhoids could be found in the rectum. The surface was blanched after the hemorrhages, but there was not a trace of cancerous cachexia. The diagnosis arrived at was: moderate degree of cirrhosis of the liver, conjoined with disease of the walls of the intestine, either ulcerative or cancerous in nature. At the autopsy, marked but not extreme cirrhosis of the liver was found. The stomach and intestines contained a large amount of blood, which had entered them through an opening about half an inch in diameter, close to the entrance of the ductus communis choledochus. A probe passed through this opening directly entered a cavity in the head of the pancreas, which was filled with fluid blood and clots.

The pancreas was referred to the Committee on Morbid Growths, who made the following report:—

The head of the gland, which is enlarged and hardened, presents in its interior a cavity about the size of a large walnut, which communicates with the duodenum by an ovoid orifice at least half an inch in diameter. The walls of the sac are trabeculated, but everywhere covered by a smooth mucous membrane, such as we often see in retention-cysts. There is but little of the proper gland tissue to be seen in this part of the organ, its place having been apparently usurped by dense fibrous tissue. The same state of affairs is also observable in the body and tail of the gland, although in a less marked degree.

The contents of the cyst had all been evacuated, but the microscope showed numerous crystals of hematin lying on the surface of its lining mucous membrane.

Thin sections under the microscope showed that the acini of the gland were diminished in size, the epithelial cells constituting their secreting structure being in a state of granular degeneration, and presenting an abundance of oil globules; and in some of the larger ones could be seen numerous crystals of margarine. The white and yellow fibrous tissue forming the stroma of the gland were increased in quantity, and evidently by their pressure contributed to the degeneration and atrophy of the secreting structure, aided, doubtless, by the pressure of the dilated duct.

After the fat was dissolved out by sulphuric ether, a small quantity of acetic acid was added, which brought out clearly the immense number of elongated nuclei existing in the fibrous tissue, and thus attested its vigorous nutrition and growth.

In view of these facts, the committee submits that the specimen is a well-marked case of cirrhosis of the pancreas, and believe that the cyst was a retention cyst caused by constriction of the excreting duct of the gland (duct of Wirsung); the constriction probably having its origin in some attack of subacute interstitial inflammation which had been attended by the exudation of lymph—such an inflammation as constitutes an essential part of the first stage of cirrhosis.

In view of the comparative rarity of pancreatic disease, and the numerous interesting but unsolved problems which that organ presents both to the physiologist and pathologist, the committee has been led to look up the scattered and not very abundant literature pertaining to its diseases.

Amyloid degeneration of the gland tissue has never been found, although it has been occasionally encountered in the vessels which supply it.

Syphilitic and tuberculous changes in the pancreas are very rare; cancer, however, is more frequent, and is usually primary.

Atrophy of the gland tissue and the formation of cysts, owing to chronic interstitial inflammation, are more common; and where cysts have been formed there is a marked tendency to hemorrhages, which are often profuse.

For a careful analysis of the subject, as well as of most of the well attested cases illustrating it, we beg leave to refer to the valuable Manual of Pathological Anatomy recently published by Prof. Klebs, of the University of Bern.

Nov. 10. *Tumour of the Lower Jàw.*—In presenting this specimen Dr. S. W. GROSS said:—

A. H., fifty-nine years of age, first noticed, ten years ago, a soft, fungoid mass at the gum of the lower right lateral incisor, which was decayed. On the extraction of the offending tooth the fungus shot up, and at the expiration of seven months, when it was cut away, it had attained the size of a small English walnut. The disease speedily returned, and, after the lapse of five years, it involved the alveolar border of the lower jaw, from the second bicuspid cavity of the left side to the corresponding point of the opposite side. A second operation was performed at this time, and the disease is described by the patient to have been of a cystic nature with gelatinous contents. Repullulation rapidly recurred, and a third operation, in which the gouge was freely used, and which was attended by free hemorrhage, was executed on the 10th of June, 1868, with a similar result.

The man was brought to the surgical clinic of the Jefferson Medical College on the 9th of November, 1870, when the jaw was found to be completely edentulous from repeated extraction of the teeth. The growth felt soft and elastic, and imparted to the touch a sensation of fluctuation. Its upper or free border consisted of thickened and very vascular mucous membrane, while its lower limit was formed by the basilar portion of the bone. The central part of the body of the jaw was particularly involved, being expanded and elongated at the mental process; but the disease extended apparently only as far back as the second molar alveolus of each side. It had never been the seat of pain, and there was no evidence of hereditary taint. The submaxillary lymphatic glands of the right side were slightly enlarged.

Professor Gross made an incision along the posterior margin of the basilar portion of the bone, which included the supposed limits of the disease; dissected up the soft parts, and divided the bone at the second molar socket with the forceps. It was then found that sufficient bone had not been removed on the right side, so that the entire body on this side, as well as the angle and an oblique portion of the ramus just above the insertion of the internal pterygoid muscle, required excision. The hemorrhage was excessively free, the blood oozing at every point, and showing no disposition to coagulate, even under the use of subsulphate of iron and the hot iron. A large number of vessels were tied; many bleeding points were included in the twisted suture; the edges of the incision were brought together by harelip pins; cloths wrung out of ice-water were applied externally; while acetate of lead, tincture of digitalis, and opium were exhibited internally. Under the combined influence of these measures the oozing ceased in seven hours.

The tumour was composed of gelatinous material, of a greenish tint, and of the consistence of firm jelly. The mental process was perforated in front and behind by numerous openings, through which the same material was plainly visible. The mucous membrane of the gum, which formed the soft portion of the cyst, was greatly thickened and pervaded everywhere by minute vessels.

The tumour was referred to the Committee on Morbid Growths, which reported as follows:—

The tumour has probably had its origin in the medulla of the lower jaw in the neighbourhood of the symphysis, and having by its pressure caused absorption of the outer wall of the bone, has pushed forwards the thickened and inflamed periosteum, which now forms a dense cover for the exterior. At the symphysis there are a few small nodules of bone, formed by the inflamed periosteum.

Portions of the tumour placed beneath the microscope exhibit large spindle-shaped cells with well-marked nuclei and thin, fibre-like processes, often many times the length of the body of the cell. These processes are sometimes split at the end, and form a network anastomosing with neighbouring prolongations of similar cells; while others, placed side by side, form long bands, which give a trabeculated appearance to these portions. The cells are imbedded in a granular intercellular material, and some portions of the tumour present in abundance the so-called "giant" or "mother" cells crowded with nuclei.

The committee therefore believes the tumour to be a rapidly growing spindle-celled sarcoma (epulis sarcomatosa).

Syphilitic Disease of Testicle.—Dr. PACKARD presented this specimen. The history of the case was as follows:—

Mr. K., æt. 45, living in the interior of the State, a man of very robust frame, contracted a genuine hard chancre (as evidenced by the cicatrix on the left side of the body of the penis) four years ago. He had subsequently sore throat, nocturnal pains, and other constitutional symptoms, and the testicle became swollen a year after the sore appeared. The local trouble being occasionally very annoying and painful, and there being no other sign at present of any disease in the patient's system, I excised the testicle on the 4th of November, with the aid of Drs. Agnew and Sinkler. Healing took place very rapidly, and on the 16th he returned home.

It may be well to mention that I applied acupressure to the spermatic cord (the vas deferens being carefully separated), and removed the needle in forty-eight hours. To this, in part, I attribute the rapidity of healing.

The specimen was referred to the Committee on Morbid Growths, which reported as follows:—

The specimen of diseased testicle presented by Dr. Packard bears traces of repeated attacks of inflammation of the tunica vaginalis. Both the visceral and parietal surfaces of this membrane are coated with a thin layer of lymph, giving it on close inspection a somewhat trabeculated appearance. At the position of the gubernaculum testis these bands are so developed as to resemble the fibrous expansions of the columnæ carneæ of the heart, as they pass to their insertion in the mitral valve. The epididymis appears healthy, although its fibrous envelope is thicker than usual. The gland proper is about the usual size, but on section shows at its central posterior portion a yellowish white nodule, ovoid in shape, ½'' in its long diameter. Above this the secreting structure of the gland has undergone atrophy, and the mediastinum and the septula setting off from it are, on close inspection, to be distinguished from the dense whitish mass which has usurped the place of the proper gland tissue. Below the above-mentioned nodule the gland structure still exists; the septula, however, are thicker and more developed than usual. A section near the edge of the ovoid nodule, when placed beneath the microscope, shows a luxuriant growth of the cells of the connective tissue, with multiplication of their nuclei, and, as we advance towards the centre of the mass, these cells become enlarged and crowded with fat globules, although still retaining a definite cellular form; further on, however, breaking down into a mass of granular debris.

In view of these facts—the tough consistence, yellowish appearance and seat of the nodule, the disease involving only the testicle proper and not the epididymis; the thickening of the tunica albuginea, and the fibrous adhesions from repeated attacks of inflammation of the tunica vaginalis, together with the microscopic appearances which are so characteristically those of a gummy tumour—the committee has no hesitation in pronouncing the growth a typical case of syphilitic gumma of the testicle.

Cirrhosis and Complete Atrophy of Vesicular Structure of the Left Lung; Cheesy Deposit, with Miliary Tubercle throughout the Right Lung.—Dr. TYSON presented the specimens, and read the following history:—

John L., æt. about 26, a paid nurse in the men's medical ward of the Philadelphia Hospital, was said for several years to have had a left phthisis, and had cough for six years. He was, for some days before I saw him, under the care of the resident physician, in whose ward he had served.

On October 11th, when asked to see him, I found him with a hot skin, pulse 148, respirations 60, and a temperature of 102°.3 in the axilla. He stated that three weeks ago he was seized with chill and fever, with sharp cutting pains in the right side; has at present no pain except after a paroxysm of coughing, which is followed by acute pain under *left* nipple, but it subsequently passes away.

Percussion elicited dulness beneath the left clavicle anteriorly, and over the left scapula posteriorly, with corresponding bronchial breathing on auscultation. The left axilla was more resonant on percussion, as was also the base of the thorax, but occasional fine bubbling sounds were noted by auscultation in both situations. Resonance was greatly impaired throughout the right lung, and fine bubbling sounds prevailed correspondingly. In the right axilla these were accompanied by creaking friction. He was ordered to be dry cupped—first over the one lung, and on the following day over the other—with marked temporary relief. The usual restorative and stimulant treatment was directed. Little change took place in the physical signs. He became gradually more feeble, and died of exhaustion.

Post-mortem examination.—The lungs alone exhibited phenomena of interest. Throughout the right lung were nodules of cheesy matter as large as a pea and larger; many of these could be expressed from small bronchial tubes. Equally disseminated, were translucent granulations of miliary tubercle, apparently of more recent date. The posterior part of the middle lobe of the right lung was the seat of a circumscribed pneumonia.

The left lung was interesting, in exhibiting complete absence of its vesicular structure, while the portion which remained was made up of numerous sacculated dilatations of bronchial tubes and intervening fibrous structure, so that the mass of lung remaining, which was flat and scarcely exceeded six inches in diameter, presented on section a perforated or honeycombed appearance.

Dr. WILLIAM PEPPER referred to a remarkable and somewhat similar specimen which he had presented to the Society in the early part of the year. It differed from the present specimen, however, as presenting the form of fibrous degeneration of the lung, attended with abundant formation of new fibrous tissue in the interlobular and interbronchial spaces, but without any marked dilatation of the bronchi. The lung was but moderately contracted, and on section presented a dense, marbled appearance of cartilaginous hardness, whereas, in the present specimen, the cirrhotic inflammation of the interstitial connective tissue has been followed by contraction, and consequent atrophy of the vesicular tissue, while the bronchial tubes have all undergone extreme diffused dilatation. The question is still open to debate, whether, in such cases, it is the cirrhotic contraction of the interbronchial tissues which draws open these tubes, or whether there is coincident inflammatory softening of the walls of the bronchi, which causes them to yield to the violent cough which attends such diseases of the lung. Probably both of these play a part in producing dilatation of the bronchi, when so extreme as in the present case.

Oct. 10. *Cancer of Stomach, with Cheesy Deposits in Lungs, of later Formation.*—Dr. JAMES C. WILSON presented the specimens and furnished the following history:—

Margaret O'Brian, Irish, æt. 46, married; a domestic. Lost a brother and one sister by phthisis pulmonalis. No history of cancerous disease in her family. Her health was always good until April, 1869, from which time she dated the beginning of her illness. While at work as laundress, she was suddenly seized with violent dysenteric symptoms, frequent vomiting—the ejecta containing occasionally a little dark blood—and diarrhœa, the stools being small, dark, and containing bloody mucus. She had high fever and became very prostrate, and in a short time noticed œdema of feet and ankles. After a long illness, she improved somewhat, and was admitted to the Pennsylvania Hospital in October, 1869. At that time she had no vomiting, but frequent, copious discharges from the bowels; and a small, hard, movable, non-sensitive mass, about the size of an egg, was noticed in the epigastric region, but no other tumour was detected. Her menses ceased from the beginning of her illness. She remained in the hospital four months, and felt well enough at the time of her discharge to return to her work as a domestic. She continued, however, to be weak and miserable until her readmission, August 10, 1870, having had in the meanwhile continual diarrhœa and frequent slight œdema of the feet, with at least one attack of severe vomiting and purging, with fever, similar to that with which her sickness began.

On admission she was very pale and weak; her face pinched; colour anæmic and sallow; conjunctiva slightly cholæmic; tongue clean and glazed; there was frequent vomiting; bowels moved frequently and irregularly, the stools being large, watery, whitish, very offensive; pulse 80, feeble; urine about normal in quantity and appearance; it showed no albumen, no deposit on standing. There were no cardiac or pulmonary symptoms.

On palpation, a hard, movable, non-sensitive mass, the size of a fist, was felt in the epigastrium, slightly to the left of the median line.

Her condition remained much the same, with occasional brief amelioration, and the addition of slight pains at times, referred to epigastrium and to upper part of chest, until the middle of October, when she became much worse, rejected food, had profuse diarrhœa, sank rapidly, and died November 2d, of exhaustion.

Autopsy five hours after death.—Cancerous cachexia evident, if not marked; rigor mortis established; emaciation extreme; ankles slightly œdematous; absence of abdominal dropsy; firm, though not extensive, adhesions between the greater curvature of the stomach and the transverse colon. The stomach contained a quantity of dark, turbid fluid, resembling broken-down blood, and presented on its mucous surface a large, irregular, cancerous mass, of moderately firm consistence, occupying the pyloric extremity of the organ, and chiefly its greater curvature. The pylorus was not encroached upon to any considerable extent by this growth. The pancreas showed no cancer; the liver none. The latter viscus was large, highly anæmic, markedly fatty, and of a light creamy-brown colour. Throughout the right lung, and especially at its apex, were numerous small, hard deposits; a few points were also found scattered through the left lung. There was no enlargement of either the mesenteric or bronchial glands. The other viscera were normal in appearance.

Dr. George Pepper said this case had been under his constant observation during two terms of service of Dr. J. F. Meigs. During the past two months, and during the corresponding months of last year, there was a tumour in the epigastrium as large as an English walnut, but so entirely without pain or other symptom was it for a long time, that it was scarcely thought to have had anything to do with her disease. Finally, however, there developed the symptoms which proved its association; but throughout there was little or no pain, and, until the last, only occasional vomiting. The mass was always quite movable, situated to the left of the median line, and when she lay upon her right side, it would fall over into the right hypochondrium. Indeed, it seemed more like disease of the greater curvature of the stomach, or omentum, or large intestine.

The history of the disease dated back at least one year, and during the whole of that time she was failing steadily and progressively. The condition of the lung was not suspected during life. Dr. Pepper had never heard of her coughing. She certainly never complained of her chest, and at the examination on admission her lungs were pronounced healthy.

Dr. Parry said that his experience would lead him to believe that there was often absence of pains in secondary cancer of the lung. This instance called to his mind two cases. A few days ago a woman died at the Philadelphia Hospital, having soft cancer of the uterus. It was supposed that she had trouble with her lungs, and after death several large cancerous masses were found in these organs. Here the symptoms of lung trouble were much less marked than he should have suspected. A second case of cancer of the uterus had also exhibited cancerous masses in both lungs, preceded by few symptoms. In both cases the so-called cancerous cachexia was profound.

Nov. 24. *Rachitis.*—Dr. PARRY presented the specimens and read the following history:—

John B., æt. 9 months, coloured, and an inmate of the Philadelphia Hospital. His mother was a very healthy woman, and had a full breast of milk. She gives a very imperfect history of her child's previous condition, but it appears that for two or three months before his death he suffered from indigestion, vomiting occasionally, and having attacks of slight diarrhœa, alternating with constipation. During this time he sweated profusely about the head and shoulders. For two weeks preceding his death he had a little cough, but he was not considered ill until November 10th, during the night of which he suddenly grew worse, and on the 11th he had fever, cough, dyspnœa, a frequent, weak pulse, and occasional vomiting. Physical examination revealed the existence of bronchitis.

The evidences of rachitis were extremely well marked; the head was large and square in outline; the sagittal suture was open, and the anterior fontanelle was extremely large, but not elevated; the frontal suture had not united, and the two halves of the bone were connected by a membrane about half an inch wide; this extended down to the root of the nose, and was continuous with the anterior fontanelle above; there was no separation of the coronal and lambdoidal sutures; over the whole surface of the occipital bone cranio-tabic spots were easily detected; dentition had not commenced.

At the base of the thorax, on a line with the ensiform cartilage, was a transverse furrow; upon each side of the chest was a vertical depression following the articulation of the costal cartilages with the ribs; at the bottom of this furrow distinct "beading" of the articulation could be felt; the sternum was prominent; the lower extremities of the radius and ulna were slightly enlarged in both arms; the bones of lower extremities were not diseased.

On the 12th the child died of the bronchitis.

Autopsy fourteen hours after death.—Body not much emaciated; anterior fontanelle depressed; between the two halves of the frontal bone was a furrow as wide as the index finger; scalp normal; anterior fontanelle an inch and a half wide, and merged into the membrane of the separated frontal suture; the tissue closing the fontanelle was normal in appearance, and that uniting the two frontal and the two parietal bones could not be distinguished from it; lambdoidal and coronal sutures normal; in the occipital bone were twenty cranio-tabic spots, the largest about three-eighths of an inch long; parietal bones consisted of two portions, the protuberances of which were prominent, well ossified, hard and translucent, and an outer portion, which was thicker, softer, more succulent and opaque; temporal bones much thickened, softened, and very porous; pericranium over the diseased bones thicker than normal, and when stripped off it brought away minute portions of bone with it; inner surface of cranial bones nearly natural in appearance; nothing abnormal about the dura mater; brain large, firm, and completely filled the cranial cavity; no hydrocephalus whatever; a little venous congestion of the organ, but otherwise it was perfectly normal; costal cartilages depressed in front of the nodules; direction of ribs normal; external enlargement of the articulation of the ribs and costal cartilages not great, but in the inner surface of the thorax the beading was remarkably well developed; lungs presented the ordinary characters of acute bronchitis; abdominal organs all healthy; no albuminoid degeneration of any of them.

These specimens present some rather unusual features. I have had numerous opportunities of making post-mortem examinations of the bodies of rickety children, but in this skull the lesions of the disease are better developed than I have ever seen them before, and until now it had never been my fortune to meet with such a remarkable separation of the frontal suture. The most noteworthy feature of the case, however, is the entire absence of hydrocephalus, which, we know, is not common in conditions like those described. Ritter von Rittershain believes that in these cases the effusion of serum is the primary step in the process, and to it he ascribes the production of the open sutures. Here, however, is an instance in which the rachitic lesions of the skull are remarkably well developed, without an abnormal quantity of serum either at the base or in the ventricles of the brain. The case is extremely interesting in being free from any cerebral complications.

It is my opinion that the frequency of rickets in this country is much underestimated. Dr. Gee has asserted that 30.3 per cent. of all the sick children coming under his observation at the Children's Hospital in London suffer from this affection. Ritter states that his investigations in the Medical Poliklinik at Prague have shown that 31 per cent. of all the children under five years of age there treated are rickety. So far as I am aware, no statistics in regard to the frequency of this disease in this country have been published. I have been for some time investigating this subject in the children's department of the Philadelphia Hospital, and I do not hesitate to assert that 25 per cent. of all the children between two months and four years old now in that institution are rickety.

Dr. **Jenks** was inclined to question the complete identity of this cranio-tabial process, as met in the skull, with rachitis. It was first described by Elsässer, whose observations are exceedingly valuable, and accurate to a wonderful degree; but his pathological descriptions are vague. Virchow has not hesitated to declare the identity of cranio-tabes with rickets.

In rickets, however, we have proliferation of the cartilage-cells and irregular calcareous deposit, whereas, in cases of this sort, the bone is slowly dissolved, the intercellular substance becomes granular, the salts disappear, and then a process of absorption ensues, so that you often get pictures under the microscope in which the bone-cell is preserved, and half projects from its cavity. Rittershain also doubts the complete identity of cranio-tabes with rickets, and distinguishes two forms, a general softening of the occiput, which he characterizes as rachitic, and a partial circumscribed absorption which cannot be accepted as an evidence of rachitis.

If portions of the bone surrounding these membranous spots be ground down, and treated with sulphuric acid, a good view can be obtained of the true bone-cells, which can be tinged with iodine or carmine. In no specimen that Dr. Jenks had examined could be found any evidence that the bone-cell itself participated in the process, nor did there appear to be an increased proliferation of the periosteal cells. No theory has been advanced which will explain the occurrence of this disease. Originally it was suggested that it was caused by the pressure of the brain upon those parts, from the fact that the child passes so much time in the supine position. The theory that it was due to excess of lactic acid in the blood has been abandoned. I was induced more particularly while studying the condition of encephalitis neonatorum to believe it due to cerebral venous congestion, the bony salts being dissolved by the excess of carbonic acid in the blood. The pulmonary embarrassment, so common in rachitis, may have something to do with the formation of this cranio-tabial condition.

Dr. PARRY said cases like this were not rare in the Philadelphia Hospital. He was not willing to accept Dr. Jenks's view, that they are the result of an interference with respiration. He has found them when there is no respiratory trouble. Respiratory disorders are, in many cases, a sequel of the disease or diathesis from which the patient suffers. The complication thus arising is often fatal, occurring often where the diameters of the chest are diminished by alteration in the direction of the ribs. Very frequently I have noticed this change in children who have never had any respiratory disease.

Dr. JENKS did not intend to limit the causation of these spots of craniotabes to respiratory troubles, but believed that anything which produces congestion of the head might be instrumental in developing them.

Dr. MITCHELL said this specimen reminded him of one he had seen many years ago, in the child of a Scotch gardener of his father, in which, during a period of decline, there appeared several soft spots on the skull, about half an inch in diameter. A physician was called, who supposed them to be abscesses. He opened one, but no pus appeared. Three months later the child died. There were eleven such perforations in the skull.

December 8. I. *Phthisis: Cavity at Apex of each Lung; Disseminated Miliary Tubercle and Cheesy Deposit.* II. *Phthisis: Cavities; Cheesy Deposit only.*—Dr. TYSON presented these two sets of lungs, with the following history:—

CASE I.—W. B., aged 19, a slipper-maker, temperate, was admitted to the Philadelphia Hospital Oct. 19, 1870. Is ignorant of causes of death of parents and five brothers and sisters. In winter of 1869–70 took cold from exposure while perspiring, since which has had cough, but has had purulent expectorations only during past three months. Recently has rapidly lost strength and flesh, and has had night-sweats with aphonia for past two weeks.

At admission was much emaciated; had aphonia and harassing cough, no sweats, but almost constant febrile movement, with daily exacerbations, and a temperature often as high as 105° in the axilla. Physical examination revealed equal dulness under each clavicle as far as second rib, but extended on left side as far as nipple; correspondingly were cavernous respiration and pectoriloquy. Posteriorly there were dulness, pectoriloquy, and cavernous respiration in supra and infra-scapular spaces.

The usual treatment was instituted, with imperfect results. Inhalations of morph. sulph. gr. ss, and pot. chlor. gr. xx to f℥j of water were, however, grateful.

The patient gradually sank, and died Nov. 30.

Post-mortem, twelve hours after death, exhibited, as to larynx, œdema of both arytenoid cartilages, more marked in the left. The interior of the larynx is the seat of almost continuous ulceration from the epiglottidean folds to below the true vocal cords, the right of the latter being completely eroded. Below these points is continuous follicular ulceration to the beginning of the trachea. The *trachea* itself, excepting anteriorly, is the seat of excavating ulceration as far as its bifurcation, more marked posteriorly, where the cartilages are absent.

The *lungs* were the seat of cavities, one in each apex, the larger in the left. But scattered throughout the remainder of both lungs were abundant cheesy deposits, between which were numerous transparent gray granulations of miliary tubercle. No pleurisy.

CASE II. was that of a miserable girl, aged about 25, who was admitted to the inebriates' ward of the Philadelphia Hospital late in September, with delirium tremens. She was treated with chloral, and recovered, but to become the victim of a rapid phthisis, which apparently beginning in solidification of the left apex, soon manifested all the evidence of cavities at the top of each lung. Treatment availed little, emaciation progressed to an extreme degree, and she died late in November, little more than two months after the first symptoms were observed. Post-mortem examination revealed extensive cavities in both lungs, and cheesy deposits occupying the calibre of the bronchial tubes of medium size, throughout each organ. No gray tubercle was anywhere present.

There are one or two points of clinico-pathological interest in connection with these cases.

In the first it is likely that the deposition of the miliary tubercle, induced, perhaps, by the absorption of the chronic bronchial deposit, occurred at the date specified, two months before admission, and from this we date the rapid decline of the case, according in these respects with recent investigations upon this subject.

Case II., however, does not, at first sight, accord with what we should expect. Here was a case of chronic bronchial disease, of the form which is ordinarily amenable to treatment, or at least does not terminate very rapidly, running its course in little more than two months. This is not usual. But, when we consider the previous history of the patient was that of a common street drunkard, with vital powers at their lowest ebb, it is not unreasonable that the case should pursue such a speedy course.

December 22. *Ovarian and Uterine Tumours.*—Dr. PORTER presented the specimens, with the following history:—

Maria W., aged 60, a coloured cook, of large frame, and rather fat. She was the mother of five children, the youngest being now 23 years old. She never menstruated after the birth of the last child, although she had always been regular before. Soon after this she noticed that her abdomen was enlarging, but she never paid any particular attention to it as she was enjoying good health, and continued to work till the autumn of the present year, when she began to be troubled with shortness of breath and œdema of the lower extremities. This increased to such an extent that she was soon unable to work. On the 12th of October she was seen and examined by Dr. Washington L. Atlee, who has very kindly given me the following note of her condition at that time: "She has a fatty, protuberant, and rather pendulous abdomen, independent of the tumour. The tumour has troubled her for several years. When on her back, with the abdomen exposed, the abdomen is perfectly symmetrical in shape. By the hand, however, I can detect a hard, smooth, oblong, almost round tumour in the right side, occupying the right iliac and lumbar regions, and the right side of the umbilical region, extending just beyond the linea alba towards the left. It was capable of being moved freely in all directions. The uterus is central, much heavier than usual, is occupied by an intra-mural fibroid in the fundus. The sound enters 2½ inches. The abdominal tumour can be moved in all directions without affecting the uterus." On the 17th of November she came under my care as a patient of the Philadelphia Dispensary, and I found her suffering, in addition to the abdominal symptoms, from considerable debility, with œdema of the abdomen and lower extremities, and great difficulty of breathing, so much so that she was unable to lie down except for a few minutes at a time. Her urine was scanty, high coloured, and contained albumen. She continued in very much the same condition until the 11th of December, when she suddenly became unconscious for about three hours. After this attack the prostration was much more marked, and she gradually sank, and died on the 19th of December.

Post-mortem examination twelve hours after death.—The abdomen and lower extremities were considerably enlarged and œdematous, pitting on pressure. On opening the abdominal cavity a quantity of serous fluid escaped, and the tumour was found occupying the position assigned to it by Dr. Atlee. The omentum was adherent at several points to the tumour, which was found to be attached to the left side of the uterus by a slender pedicle, about six inches long. The tumour contained about eight ounces of a thick yellowish creamy fluid, and a mass of hair glued together by a thick sebaceous-like matter. On making a section of this mass, no traces of bones or teeth were found.

The cervix uteri was elongated. The probe passed easily to the fundus of the uterus, about four inches. At the fundus an exceedingly hard and almost round tumour, of about two inches in diameter, was found. On sawing through this tumour the outer coating was found to be of a bony consistence, the inner less dense, more like fibrous tissue.

A smaller tumour, about three-quarters of an inch in diameter, of bony consistence, was situated on the posterior wall of the uterus. A fourth, much smaller, of which no section was made, was found on the anterior wall of the uterus.

The right ovary and its appendages were normal.

Dr. **Jenks** said the usually accepted immunity which follows calcification of fibroid tumours is not so great as is commonly supposed. He had seen specimens in which, instead of remaining harmless, such a tumour had produced ulceration of the walls of the uterus, and had escaped into the cavity of the abdomen, or was evacuated externally. In one case mentioned by Virchow the tumour perforated the anterior wall of the uterus, and finally the anterior wall of the abdomen. In another case it was discharged by the rectum. These results seem to depend not so much upon the size of the tumour as upon its vascular connection. Where calcification has taken place we invariably find the tumour has been almost surrounded by a capsule of connective tissue.

Another curious fact is the change in the form of the uterus produced by these tumours. Numerous cases are reported in which the uterus has been severed in its continuity, separation generally taking place at the internal os uteri, being twisted off as the result of constant stretching, combined with accidental rotation on its axis.

Another point of interest is with regard to the supply of bloodvessels.

The most varied statements exist on this point. Most authorities say the supply of blood is limited. While this is true in most instances, some fibroids are exceedingly vascular. Dr. Jenks had himself examined preparations of Prof. Wedl's, showing great vascularity, so great indeed as to render the tumours appropriately classed Myoma Telangiectodes (Virchow).

Dr. **Packard** said that the point last referred to by Dr. Jenks suggested the case from which he had presented a specimen for Dr. Getchell, at a meeting of the Society in June. The tumour was partly through the os uteri, and, by the efforts of Dr. Getchell and himself, by traction from below and pressure from above, was completely removed, not only without appearance of any severe vascular connection, but also without hemorrhage. The uterus returned promptly to its natural condition. He had never been able to satisfy himself how thus large a mass received its nourishment, without having vessels passing to it of sufficient size to give rise to hemorrhage after its removal, or even to be discoverable by inspection.

Ulcerative Endocarditis; Embolism of Kidneys.—Dr. **Wm. Pepper** presented the specimens, and read the following history:—

James Fullerton, æt. 30, by occupation a labourer, and in enjoyment of general good health, was admitted to the Philadelphia Hospital on Nov. 4, 1870. He had been engaged in lifting and lading heavy stones, and was conscious that he had overtaxed his strength. Some weeks before admission, he was attacked with hoarseness and partial aphonia, and had cough with some mucous sputa. Continued to work for a week, but then suffered so much from dyspnœa that he had to stop. Cough continued, and became attended with hæmoptysis. Had no symptoms of rheumatism. On admission, mind clear, face anxious, skin sallow, body emaciated, no œdema. Respiration 56, frequent spasmodic cough, with hæmoptysis; lungs deeply congested. Pulse regular, soft, and small, 96 in minute. Throbbing of cervical vessels. Area of cardiac dulness increased; impulse extended, and accompanied by marked thrill. Loud, rather hoarse, double cardiac murmur. Marked præcordial pain and tenderness. Complains of intense headache. Urine dark, with abundant urates, and slightly albuminous.

Condition continued about the same, with gradually increasing congestion of lungs and failure of cardiac power. Four days before death pulse in right radial artery disappeared, evidently from embolism of the brachial artery. Death occurred Nov. 18, 1870.

At the post-mortem examination, 36 hours after death, in cool weather, body was found advanced in decomposition. The surface of the corpse was mapped out by intersecting livid lines, due to decomposition of blood in the superficial veins. The pericardium was distended with air, and contained f℥iv of bloody serum, without any traces of inflammation. The cavities of the heart were distended with air, being blown up like bladders. The blood was everywhere fluid, dark, frothy, and the vessels and surrounding tissues were deeply stained. The tissue of the heart was soft and flabby. The left cavities were moderately dilated, and the walls rather thin. The hydrostatic test showed competency of the mitral, tricuspid, and pulmonary artery valves, but free regurgitation through the aortic valves. One of the leaflets of this valve was very much thickened, and contained a considerable collection of friable granular cheesy matter. The endocardium covering this was almost entirely destroyed, and existed only as little islets of softened tissue, or as shreds hanging and floating loosely. The cheesy material was readily disintegrated, and, in fact, numerous minute fragments of it were found in the aorta and left ventricle. The other aortic leaflets were also seriously diseased; they were much discoloured, thickened, and so much softened that numerous rents and perforations had occurred. There were a few small patches of atheroma along the arch of the aorta. The right brachial artery was not examined. The *lungs* were very deeply engorged, but presented no apoplectic patches. *Liver* was soft and congested. *Spleen* enlarged, its tissue softened and dark, but with no embolic patches. *Kidneys* not enlarged, discoloured and softened, and each presented two embolic patches, one very minute, the other about $\frac{1}{3}''$ in diameter.

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A CASE

OF UNIVERSAL HYPEROSTOSIS, ASSOCIATED WITH OSTEOPOROSIS, WITH A DESCRIPTION OF THE SPECIMENS, by J. Ewing Mears, M. D., W. W. Keen. M. D., Harrison Allen, M. D., and William Pepper, M. D.

(*Extracted from Proceedings of the American Philosophical Society, Dec. 2, 1870.*)

The undersigned. to whom were referred the above specimens, presented by a friend to Dr. J. Ewing Mears, have carefully examined them, and have prepared the following Report :—

In the investigation of the subject. we have prepared as full a history of the case as could be obtained, a detailed account of the general anatomical characters of the disease, and of the peculiarities of each individual bone, as well as of the microscopic appearances, have consulted the works and periodicals in various languages accessible in this city, and have examined all the specimens contained in the Museums of the College of Physicians, Academy of Natural Sciences, University of Pennsylvania, Jefferson Medical College, and also the hospital and private collections in the city.

We have nowhere found specimens of this disease, or descriptions of such, at all equalling in extent and severity these here described.

The only similar case, though far less in degree and extent (skeleton imperfect), is found in Virchow's Archives, Vol. 43, 1868, p. 470, plate No. 12, although we have met with specimens and descriptions of skulls and bones which afford evidences of a limited development of the same disease.

Of the pathology of the disease, as well as of the anatomical appearances (116), we have found the best descriptions in Lobstein, Traité d'anatomie pathologique, Tom. II, p. 116; Boyer, Sur les Maladies, Chirurgicales, Tom. III, p. 571; Paget, Surg. Path. Eng. Ed., pp. 301–2, and fig. 40; Stanley on the Bones; S. Solly, Med.-Chir. Trans., Vol. 27; Förster Handbuch der Path. Anat., Bd. I, S. 249–52, and Bd. II, S. 850–4; R. Volkmann, in Pitha und Billroth's Handb. der Chirurgie, Bd. II, S. 249–58; Oeffinger, Virchow's Archiv, Bd. 43, S. 470; Haubner. Canstatt's Jahresbericht, 1854, Bd. 27, S. 23–4; Virchow. Die Krankhaften Geschwülste, Bd. II, Vorlesung XVII.

HISTORY OF THE CASE.

Fully recognizing the importance the history of the case has in the discussion of the Etiology and Pathology of the disease, we regret our inability to add any information to the statement given at the time of the presentation of the specimens, which is as follows :—

A. M. aet, 14, native of England—occupation farm boy—came from England to this country when very young—father died in November. 1862, of Phthisis, aged 57—mother died in 1867, cause of death not ascertained—has one brother and one sister, both young and healthy. In September, 1866. while engaged at work on the farm, noticed swelling beginning in the face, and also, that in stooping, face felt puckered and wrinkled, while the effort to regain the erect position gave intense pain along the entire spinal column. Subsequently the fore-arms became sore and swollen, was placed under treatment, which was of such decided benefit that he thought himself entirely well, and in March, 1867, resumed his farm duties; about two months later the symptoms returned in an aggravated degree, the feet and then, in succession, the legs and thighs becoming enlarged and very painful; under the influence of constant bandaging the swelling diminished; his appetite became impaired, and he died from exhaustion Feb'y 8th, 1868. The treatment adopted was mostly of a tonic character.

DESCRIPTION OF THE SPECIMEN

(See Plates I. and II.)

I. WHAT BONES ARE WANTING.

We have the entire skeleton except the following bones:

Vertebræ—5th and 7th cervical.
1st and 10th dorsal.
2d lumbar.
2d and 4th sacral.
all the coccygeal.
Sternum, gladiolus and ensiform.
Hyoid bone.
Right Patella.
Hands, all wanting save the right scaphoid.
Feet, all wanting save left calcis.

Five metacarpal and metatarsal bones and eight phalanges are preserved, but, except the two metatarsals of the great toe, they can scarcely be designated, they are so greatly deformed.

II. THEIR CONDITION.

Unfortunately, by the prolonged boiling to which they were subjected before coming into our possession, the bones have lost probably all their animal matter, and are now almost as friable as if they had been burned. By removing the marrow, also, this has rendered the pathology of the disease much less clear and the microscopic examination much less valuable than it would otherwise have been. Moreover, it has removed probably all the gelatine, so that the chemical examination and the specific gravity would be worthless. Even the weights are, by reason of this misfortune, only of slight value. All the epiphyses too, except the coracoid process of the scapula, are separated from the shafts or bodies, and in some bones even integral parts are separated, *e. g.* the sacrum is divided into its component vertebræ and the innominate bone into two pieces. Many of the epiphyses are preserved, as will be indicated in describing each bone. The epiphyses have attached to them in many places the dried gelatinous articular cartilages of a transparent brown color, and when an epiphysis has been incompletely ossified, the cartilaginous portion presents itself as a similar dried gelatinous mass. The ends of the shafts of the long bones are very ragged also, the cancellated substance being exposed and more or less broken.

III. WEIGHTS AND MEASUREMENTS.

In order to have some relative standard of weight, we have also weighed the bones of a girl of about seventeen. But, it must be observed, that all these but the scapula (which wanted the acromion epiphysis) were weighed with all the epiphyses. These healthy bones were rather slender, but were also longer than the diseased bones (the diseased and healthy femurs being 14½ and 16 inches respectively, excluding the lower epiphyses).

Diseased Bones.		*Healthy Bones.*	
Femur (without lower epiphysis)	8 oz.	Do (with all epiphyses)	8 oz. 3½ drms.
Tibia (" " ")	5½ "	Do " "	5 " 1½ "
Humerus (with all epiphyses)	3½ "	Do " "	2 " 3½ "
Radius (without epiphyses)	1½ "	Do " "	6 "
Ulna (without lower epiphysis)	2 "	Do " "	6½ "
Clavicle (" inner ")	½ "		
Scapula (" all epiphyses except coracoid)	1 "		
Fibula (without both epiphyses)	1½ "	Do " "	7½ "

The following are the measurements in circumference of the bones, the same healthy skeleton as before being used for comparison.

	Diseased Bones.	*Healthy Bones.*
Femur (middle),	5 in.	2½ in.
Tibia "	4¾ "	2½ "
(at tubercle),	5⅝ "	4⅞ "
Humerus (middle),	4¼ "	2 "
(above condyles),	5 "	3¼ "
Radius (middle),	3½ "	1¼ "
(lower fourth),	4¼ "	1⅞ "
Ulna (" and middle),	3½ "	1⅛ "
(just below corocoid),	4⅛ "	1⅝ "
Fibula (lower fourth).	1¼ "	1⅜ "
Clavicle (acromial extremity).	3¼ "	2⅜ "

The following are the diameters. In general the original limits of the bone were pretty easily distinguished. The external line of demarcation in the femur and the posterior in the tibia are so indistinct that the diameters of the original bones are not wholly reliable. All the diameters are derived from longitudinal sections by a circular saw, and they are all at the middle unless otherwise stated.

	Original Bone.	*Diseased Bone.*	*Addition by Disease.*
Femur,	1 in.	1 1/2 in.	1/2 in.
Tibia,	1 "	1 9/16 "	9/16 "
Humerus,	3/4 "	1 3/8 "	5/8 "
Radius (middle),	7/16 "	1 1/16 "	5/8 "
(upper third),	1/2 "	7/8 "	3/8 "
(lower third),	3/4 "	1 1/4 "	1/2 "
Ulna (middle),	7/16 "	1 "	9/16 "
(at coronoid),	5/8 "	1 1/4 "	5/8 "
(lower third),	3/8 "	1 "	5/8 "
Metacarpal (great toe),	1/2 "	11/16 "	3/16 "
Phalanx "	7/16 "	11/16 "	1/4 "
Clavicle,	3/8 "	3/4 "	3/8 "
Fibula (upper & lower thirds)	5/16 "	3/4 "	7/16 "
Ilium (1 in. above acetabulum),	9/16 "	7/8 "	5/16 "

IV. GENERAL DESCRIPTION.

The bones which have suffered the most are the clavicle, humerus, radius, ulna, femur, tibia, fibula, metacarpals, or-tarsals and phalanges of both hand and foot. These are diseased in almost the entire length of their shafts. The radius and ulna have suffered rather more than any of the other bones just named. All the other bones of the trunk have suffered to some extent, those of the skull but very little or not at all.

Comparing the upper and the lower extremities, there is no appreciable difference in the violence of the disease.

Comparing the two sides externally, not only is there no difference in the extent and character of the disease, but there is the most remarkable symmetry of the corresponding, diseased bones, which may be traced even to details. (Figs. 9 and 10.) The disease begins and ends on both sides at corresponding points, it changes in character from simple porosity to the growth of osteophytes at corresponding points; if on one side the posterior part of the bone is most diseased, the same is true of the other side; if the osteophyte growth is continuous or interrupted on one bone (fibula Fig. 18) it is so on the opposite one; if one is unusually diseased at a tendinous or aponeurotic insertion, so is its mate; if a groove or a variation in color exist on the one side, the same will be found on the other side; even of single marked spiculæ of bone the same may be said; so that a description of one side will answer for both, minute differences being noted as they occur.

The main violence of the disease is expended on the shafts of the long bones. The epiphyses, of which the most important remain, *e. g.* those of the femur, tibia, humerus, &c., show we may almost say no disease. The lower epiphysis of the femur is slightly porous in the usually compact layer of the articular surface, but so fine is the porosity and so slight the disease that it would not be observed save on a most careful examination.

The other epiphyses show occasionally still slighter disease. Indeed it is a question whether this be not the result of the prolonged boiling. The bones of the trunk are but little affected except the sternum, which must have suffered severely, the manubrium being very porous and much thickened. The bones of the head are scarcely at all affected.

The point of greatest development of the disease varies with its character. 1°. The thickening is most developed in the middle of the shafts, and here generally the sclerosis is furthest advanced. (Figs. 3, 4, 5, 21.) 2°. The porosity is not noticeably greater in any particular parts of the shafts, but seems externally to be equally diffused. 3°. The osteophytes follow a marked law in their development. They are most developed where the muscles, aponeuroses, fasciae, &c., are attached, *e. g.* the linea aspera, interosseus ridges of the tibia and fibula, radius and ulna, the insertion of the deltoid, biceps and brachialis anticus, the condyloid ridges of the humerus. But it is not always true conversely, that where a large muscle is attached there must be a large osteophyte growth, *e. g.* there are none at the origins of the pectoralis major and sterno-mastoid, the supra- and infra-spinatus, the insertion of the quadratus femoris, &c. One class of exceptions is, however, to be noted, viz: that at the attachment of those muscles and ligaments that are connected to epiphyses, there is generally no disease, *e. g.* the muscular attachments to the greater and lesser trochanters, the greater and lesser tuberosities, tubercle of the tibia, the tuber ischii and nearly all the ligaments. The epiphyses and their attached parts are very nearly all quite free from disease, though it may be largely developed in their immediate neighborhood.

The direction of the nutritious artery seems to have had no influence on the development of the disease either in its extent or degree.

The porosity varies in its character, and usually any one bone will show all its varieties. 1°. The surface of the bone presents a very fine cribriform appearance, resembling pumice stone. When magnified six or eight times this is seen to consist of a stout network of bone perforated by numerous small foramina, which are generally tolerably circular, and do not communicate one with another. (Fig. 24.) 2°. It may be of a finer velvety appearance. This by the same power is seen to consist of the same network of bone, whose very large foramina or meshes now communicate and are therefore very irregular in form, while the ridges forming the bony net-work are very thin and form relatively high walls between the adjacent meshes. Sometimes these ridges assume a tolerably regular parallelism, giving a striated appearance to the part. 3°. A coarser appearance is often produced by a similar honey-combing with large foramina or meshes, deep and irregular, varying in size from a horse-hair to a line in diameter with the first or second variety existing in the intervening ridges. (See lower end of Humerus, Fig. 1.) 4°. The surface is often pierced more or less sparsely by small foramina about the size of a horse-hair. (Fig. 20.)

The osteophytes vary greatly also in their character. In shape they are either pointed, flat, or clubbed, sessile or pedunculated. They frequently form larger or smaller scales, which cover more or less of the bone. They vary from the smallest size visible up to ¾ inch in length or ½ inch square. They are often compound, smaller ones growing from larger ones as a base. Imbrication is not unusually a marked feature, and whether imbricated or not, their direction or "trend" almost always follows that of the fibres attached at that point. This is very marked where adjacent muscles run in different directions, *e. g.* the flexor attachments of the radius and ulna as contrasted with that of the pronater quadratus. (Figs. 11 and 15.) The grooves between the osteophytes have sometimes rolling edges, sometimes are as sharp as if cut with a knife, and often lie closely together and parallel; they are apparently made in many cases by the numerous small vessels. All of the osteophytes are more or less porous.

The color is usually normal, but in some places is of varying shades of brown.

On a section the whole bone is seen to be encased with a new formation of bone. This is true not only of the long bones but also of the scapulæ and ossa innominata. Viewing these bones and also many parts of the shafts of the long bones on the surface, one would suppose he had simply to do with the original thickened bone which had undergone this porous change. But a section shows that there is a complete new formation which is added layer after layer around the old bone. These layers (excepting where sclerosis has taken place) are separated by interspaces sometimes just appreciable to the eye, sometimes a quarter of an inch wide. (Fig. 17). The outer layer is often very thin, but presents to the eye that deceptive appearance of apparent compact tissue which has simply become porous. Where sclerosis has taken place or osteophytes are developed, of course the thickness of the outer layer is either greatly increased or else undeterminable. The other layers also vary in thickness from the development of the sclerosis from the thinnest possible to one or two lines. "These layers may sometimes be traced into continuity with those forming the healthy portion of the wall" * of the original bone, especially at the extremities of the shaft. (Fig. 4.) At these points, starting from the original compact tissue, the several layers of the encasing new formation gradually become more and more widely separated or new layers may appear, thus producing a very great thickening at the centre, while at the ends of the shaft the thickening gradually (sometimes suddenly) diminishes. The interspaces between the layers are sometimes for even an inch wholly void, but they are generally filled with intervening trabeculæ of bone, which form a cancellated tissue and also support the superimposed layer to which they are always *perpendicular*. To a very large extent these layers have been welded together by sclerosis, and sometimes the new growth and the original bone present no line of demarcation by which they can be distinguished. Where this solidification has taken place, the cut surface instead of the uniform ivory-like solidity of normal compact

* Paget. Surg. Path. Eng. Ed. 1863, p. 301-2, and fig. 40.

tissue presents a granular appearance, as if the cancelli of the interspaces were not solidly filled up. The process of sclerosis not infrequently dips down like a cone whose base is of considerable extent at the surface of the new growth and whose apex just touches, or is sometimes welded with the original compact tissue. (Fig. 21.) Eburnation has nowhere taken place.

The original bone, too, has undergone marked changes. Its limits are generally pretty well defined, but the compact tissue of which its wall once consisted, is now cancellated, to a greater or less degree (osteo-spongiosis). Sometimes all appearance of compact tissue, save a mere worm-eaten porous external film, has disappeared. Sometimes no cancellation appears, but the old and new growths are welded together. The cancelli of the once compact tissue of the old bone always run *parallel* with the *axis* of the bone, and are thus easily distinguished from those of the spaces between the laminæ of the new growth which run at *right angles* to the surface of the bone. (Figs. 4 and 17.) The old cancellated tissue has often very large cancelli and in some cases has disappeared, leaving a wider medullary canal than is normal.

The epiphyses do not appear materially altered on section.

V. DESCRIPTION OF INDIVIDUAL BONES.

1. *Head.*—All the bones of the head are present, completely disarticulated. The spheno-occipital suture was not ossified. No sections were made of these bones, and the external appearances alone are described.

(a) Frontal. The roof of the orbit, especially in the fossæ for the lachrymal glands, is somewhat porous. Internally the porosity appears over various parts of the perpendicular portion. The irregular striated appearance from large numbers of fine grooves is marked, and sclerosis seems to have made considerable progress.

(b) Parietal. Externally slightly porous at the posterior border; internally also over, say one-fifth of the surface, corresponding to the protuberance.

(c) Occipital. Externally small scattered patches of porosity; internally the same change is limited to the superior fossæ and the groove for the left lateral sinus.

(d) Sphenoid. Porosity of external surface of greater wings, and also in most of the pterygoid plates, which are somewhat thickened.

(e) Temporal. Slightly porous and thickened externally on squamous portion, and in the glenoid cavity and in the grooves for both lateral sinuses.

(f) Sup. Max. Slightly porous on anterior surface, and at the tuberosity. The alveoli are reticulated so as to resemble almost the meshes of the pulmonary structure.

(g) Palate. Internally, slight porosity at the junction of the perpendicular and horizontal portions.

(h) Inf. Max. Ascending ramus markedly thickened, and porous internally and externally; most developed at the centre of the ramus;

body similarly affected, principally between the mental foramen and the external oblique line. Alveoli like those of the upper jaw. This bone has suffered more than any other bone of the skull.

Condition of Teeth.—The teeth were all present, and were carefully examined. They were very brittle, so as to break across with little difficulty (see *Micros. Ex.*), but presented no peculiarity of shape. The entire absence of the peculiar deformity of the incisors, noted by Hutchinson, of London, as characteristic of hereditary syphilis, is to be especially marked as it bears upon the question of causation of the morbid process.

2. *Vertebræ.*—The epiphysal plates of the bodies, and the epiphyses of the transverse and spinous processes, are all gone. In the dorsal region the groove between the three original parts in which the ossification takes place, is very deep, but they are all united more or less. This groove gradually disappears both above and below, none of the remaining cervical vertebræ showing it, while inferiorily it is visible as far as the first sacral. On section the body is not much thickened, and no line of demarcation exists. No sclerosis has taken place.

(a) Cervical. Scarcely noticeable porosity of the anterior surface of body. Posterior arch of atlas is unusually thick and dense.

(b) Dorsal. Marked porosity of external surface of body, which is elevated above the surface left by the removal of the slightly overlapping epiphysal plates, about one-half a line to a line. Spinous processes slightly porous.

(c) Lumbar and Sacral. Same as dorsal; the porosity of spinous processes being more marked.

3. *Sternum and Ribs.*—(a) The manubrium only is present, and is very thick and porous. No osteophytes.

(b) The ribs have lost all their epiphyses. They are not affected on the external surface, save slightly in one or two instances. On the pleural surface they are all porous, and often a little thickened. For about one inch from the head the entire bone is thickened and porous.

4. *Upper Extremities.*—(a) Clavicle. The sternal epiphysis is wanting. Where the surface for the articulation with the acromion should be, there is on each side an oval cup-like depression $\frac{1}{2} \times \frac{1}{4}$ in. and $\frac{1}{8}$ in. deep. (Fig. 13.) Its walls are perpendicular, its floor flat, and both are covered with a thin layer of compact tissue resembling that which covers all the ends of the diaphyses of the other bones next the epiphysal cartilage. It was filled, when first seen, with a small mass of dried tissue resembling the epiphysal cartilage already described. Possibly it may have been an unusual third centre of ossification for this bone. It was occupied, certainly, by some substance separate from the shaft of the clavicle, either a third centre of ossification, or a projecting piece of the acromion. If the former, it is a very unusual place for a supernumerary epiphysis.

The whole bone is thickened to about twice its normal width, and its surface is coarsely porous throughout. At the insertion of the ligaments on the under surface, the porosity is quite fine and velvety. At the inner half of the origin of the deltoid there are twelve to twenty stout and well developed osteophytes. A few also exist at the middle of the insertion of the trapezius. The section shows the original bone distinct from the new growth at all points. The laminæ of the new growth are very distinct at most points. A large part of those of the under surface are more or less closely united by partial sclerosis. The original bony tissue is relatively but little altered.

(b) Scapula. The coracoid process is one-third united to the bone. but wants the epiphysis developed on it at about seventeen years of age. All the other epiphyses are absent.

The bone is porous throughout, save at the centre of the infra-spinous fossa; generally of the coarse variety, but very fine in certain spots. The whole bone is somewhat thickened, as can be seen without any section, at its posterior border and on the spine. (Fig. 23.) The latter being to a great extent denuded of the outermost compact, yet porous layer of the new growth, shows the reticulated trabeculæ which supported it, and through their meshes the old external compact layer of the original bone now all worm eaten and very thin. This is especially well seen at the two extremities of the spine. The axillary border of the bone is three or four times as thick as is normal, has a few coarse osteophytes, and a very deep and wide groove for the dorsalis scapulæ artery.

(c) Humerus. All the epiphyses are preserved except that of the internal condyle. The trochlear surface projects only to a level with the radial.

The whole shaft (Figs. 1 and 2) is involved in the disease, the least at the upper fourth, the other three-fourths being about alike. The porosity is almost wholly very fine or velvety. About two inches below the head, at the insertion of the Pect. maj., the anterior bicipital ridge is greatly thickened (especially on the right side). It is continuous with a very large elevated surface (2 × $1\frac{1}{2}$ in.) at the insertion of the deltoid. This is covered with a large mass of not very large porous osteophytes whose trend is generally upwards. One (r. side) or two (left) large flat imbricated osteophytes mark the posterior lip of the bicipital groove. At the musculo-spiral groove, which is well marked, the bone is finely porous, but presents no osteophytes. At the lower third, anteriorly, the bone presents numerous osteophytes, sometimes single, but generally in groups. They are sessile, porous, and in some cases imbricated; their trend is generally downwards, except just above the epiphysis, where they are at right angles to the bone. The two condyloid ridges, especially the inner, are greatly diseased. The external ridge (especially on the right side) has several large porous sessile outgrowths with intervening grooves, the largest groove about corresponding in position to the anastomotica magna artery. The internal ridge up to the insertion of the coraco-brachialis is covered with large knobby and porous, imbricated osteophytes, continuous with a similar remarkable growth on the posterior surface of the bone, covering the origin of the internal head of the triceps, which extends to the musculo-spiral groove above, and fades into simple porosity externally. At the origin of the external head of the triceps, there is also a marked elevation covered with pointed osteophytes, and continuous with that of the deltoid insertion. The trend of all these osteophytes is downwards, and their color (especially on the right side) is a light brown.

The section (Figs. 3 and 4) shows the outline of the old bone obliterated in the lower third, and only faintly visible in the upper two-thirds anteriorly. In the posterior upper two-thirds the laminæ of the new growth are admirably shown, though even here the sclerosis is in some parts far advanced. The original compact wall in the superior one-third, anteriorily, and two-thirds posteriorly, has almost disappeared, the cancellation (spongiosis) is so great, and it is a typical illustration of this process in various stages. The original cancellated structure is either fragmentary, its cancelli being very large, or else it has entirely vanished, leaving an enlarged medullary canal.

(d) Radius (Figs. 9, 10 and 11.) All the epiphyses are gone, save the left upper one. Instead of being rounded externally, and showing a sharp interosseous ridge internally, it is almost cylindrical, increasing in diameter from above downwards. At the bicipital tubercle there is a crest of curved osteophytes under which, as in a cave, the tendon of the biceps was inserted. The oblique line is marked by a series of knobby, porous, slightly imbricated osteophytes, whose trend is downwards and inwards till they reach the insertion of the pronator teres, where their size increases, and their trend is upwards and outwards. The interosseous border is rounded off and marked by a series of deeply imbricated laminated osteophytes, all trending downwards, resembling a rounded surface deeply grooved by oblique parallel cuts of a thin saw. Where the pronater quadratus was attached, a large number of osteophytes exist in ridges, which run laterally. All the rest of the bone is thickened and porous, and where the muscles took origin, is covered with porous osteophytes.

In section (Fig. 8) the outlines of the original bone are visible throughout; the laminæ of the new growth are marked; the sclorosis is in various stages, and anteriorly for some two inches the new and old growths are almost welded together. The old compact tissue is wholly changed to spongy, and the medullary canal is increased in size.

(e) Ulna (Figs. 14 and 15.) The lower epiyhyses are absent. Like the radius, the ulna is involved in its whole length, and is about twice its normal diameter. At the insertion of the brachialis anticus, a cup-like depression surrounded by an elevated ridge of osteophytes, exists, somewhat similar to that on the bicipital tubercle of the radius. The anterior surface is covered with small porous osteophytes, with a slight downward imbrication. At the attachment of the pronater quadratus they become more marked in their development, and the imbrication is external. The interosseus ridge is rounded off and marked, as in the radius, but with several unusually large and deeply imbricated osteophytes with a deep groove, probably that of the interosseous artery. Externally a brown discoloration is seen, which is the most noticeable on the right side. Posteriorly the bone is coarsely porous, but very few osteophytes exist, save on the lower third. The intervening grooves run transversely, but are neither deeply nor sharply cut.

On section (Figs. 16 and 17) the line of the original bone can be distinguished throughout ; the laminæ of the new growth are very marked ; the sclerosis has welded together all the new layers anteriorly, and at the junction of the upper and middle thirds, the new and old growths are almost melted together both anteriorly and posteriorly. The interspace between the old bone and the first new lamina reaches one-fourth of an inch in width just below the olecranum, and the distinction between the perpendicular trabeculæ filling it up, and the longitudinal cancelli of the once compact tissue of the old bone is very marked. The medullary canal is scarcely, if at all, enlarged, and, indeed, at the point of greatest sclerosis above named, the same process seems to have invaded the canal itself.

5. *Lower Extremities.*—(a) Innominate Bones. The ilium is separated from the ischium and pubes, which are firmly and indistinguishably united together at their rami, but at the acetabulum are distinct. The Y-shaped piece uniting them is preserved, and is loose on both sides. All the other epiphyses are missing. The bones are porous throughout but not to a marked degree. The thickening varies from $\frac{1}{8}$ to $\frac{3}{8}$ of an inch, being greatest just above the acetabulum. On the ischium and pubes no osteophytes exist, save one small lamina on the body of the right pubes. The ilium is free from them except above the acetabulum for a considerable space, on and around the reflected origin of the rectus, where large and strong osteophytes exist, with a trend inwards and upwards.

On section of the ilium, (Fig. 12) the external surfaces, which otherwise would be thought to be the porous surface of the original bone, are seen to be the outer layer of the new growth. The original compact tissue has undergone spongiosis to a great extent. Sclerosis is furthest advanced just above the acetabulum.

(b) Femur (Figs. 6 and 7). All the epiphyses are separated. Both heads and great trochanters and the left lower epiphysis are preserved. The latter shows some very slight porosity, as already noticed.

Anteriorly the inter-trochanteric line is marked by a well developed growth of short, thick, rather acuminate osteophytes, separated by grooves running in the axis of the neck. A similar line of more slender imbricated osteophytes runs parallel to the base of the great trochanter and trends toward it. These two lines form the letter Λ. Immediately within this letter Λ (especially on the left side) the trend of all the osteophytes turns sharply downwards and so continues to the lower $\frac{1}{4}$ of the bone, where they are perpendicular. They are not very marked in their development. Just above the end of the shaft, however, they form an overlapping sheath to the bone. In the middle of the right femur an aperture ($1\frac{1}{4} \times \frac{3}{8}$ inches) exists in the ensheating new growth, disclosing to view the original but altered bone. Posteriorly the osteophyte growth extends from half an inch below the lesser trochanter to within 2½ inches of the end of the shaft, and the same sheath-like appearance is very noticeable at its two extremities. Where not covered with osteophytes, the shaft is very finely porous and thickened. All the central two-thirds of the shaft is one vast mass of large, irregular, porous osteophytes. Their direction is not constant, but is in general downwards, and their shapes are very varied. The mass extends for about eight inches, along what was the tolerably sharp linea aspera, but is now about ¾ in. wide and about ⅜ inch thick. The posterior inter-trochanteric line and great trochanter are not affected, except a slight porosity in the former. The lesser trochanter is wanting, but for ½ in. around it there is no disease beyond some porosity save one squamous osteophyte on the right side.

On section (Fig. 5) in the axis of the head and great trochanter the outline of the old bone is not to be made out save internally, and then only imperfectly. The old and new growths are almost everywhere indistinguishably welded together. The laminæ of the new growth, too, are welded together save at a very few points. The old compact wall is still solid, but it looks granular and does not present the ivory-like solidity of normal compact tissue. The medullary canal is somewhat enlarged at the expense of its walls. At the lower extremity the trabeculæ of the cancellated substance are normal, but in the head and neck the arches for mechanical support are much less distinctly marked than is usual.

(c) Patella. The right patella is missing. The anterior surface of the left shows a few osteophytes trending downwards.

(d) Tibia. Both the upper epiphyses are preserved. The whole bone is greatly diseased and thickened to about twice its usual diameter. The tubercle is slightly thickened and presents a ragged edge above for articulation with the epiphyses, but the greater part of the tubercle being developed from the epiphyses the disease is not very marked. The crest is rounded in its whole length and porous. The internal sub-cutaneous surface presents marked swelling and porosity. There is but little osteophyte growth, and it is generally in the laminæ except at the sartorius insertion, where it is more developed. A number of deep grooves exist, generally longitudinal in their direction and most marked at the upper third. The posterior and external surfaces are covered with a warty growth of porous osteophytes which attain their greatest development at the interosseous border and especially at the oblique line. The general trend of all this growth is downwards. Grooves for the vessels are frequent and tolerably deep.

On section (antero-posterior) the outline of the old bone is distinct at the extremities, but in the central two-thirds it is barely visible in front and wholly lost behind, the sclerosis at this part having welded together all the laminæ of the new growth and the original bone. Even at the extremities the new laminæ are not very marked. The rarefaction of the original compact substance is of course therefore not marked. The medullary canal if at all altered is narrowed by the encroaching sclerosis.

(e) Fibula (Fig. 18). Its shaft alone is preserved, and its axis is slightly bent inwards. The whole bone is encased in a newly formed osseous growth which is sometimes simply porous, and is covered with sometimes an interrupted, sometimes a continuous. growth of warty osteophytes, all more or less porous. Posteriorly and internally this growth is most developed, the trend being downwards. The lower subcutaneous surface is greatly thickened and finely porous. but has no osteophytes.

On section the bone is doubled in its diameter, the outline of the original bone being only visible in about one-half of its extent, the sclerosis obscuring it at other points. The original compact tissue is rarefied by spongiosis, and the medullary canal is somewhat widened.

(f) Hand and Foot. They are considered together, as some of the bones are indistinguishable, and moreover, in general the same description applies to both.

(1.) Right scaphoid of hand. Not diseased.

(2.) Left calcis. Porous and enlarged throughout. Porous osteophytes are seen at the attachments of the tendinous sheaths internally, and one large flat one on the inferior surface. The epiphysis for the attachment of the tendo achillis is preserved, but shows no disease.

(3.) Metacarpus, metatarsus and phalanges. Two of the phalanges have their epiphyses attached but not united by ossification. The epiphyses are not diseased. No other epiphyses are preserved. All these bones suffer by far to the greatest extent in the centre, not at all at the head (viewed externally), and but little at the base, and the new growth is five or six times as thick on the dorsum as on the opposite surface. No osteophytes exist save on one of the metatarsal bones and at the ridges for the flexor sheaths of three of the phalanges.

On section (Fig. 21), compare also Fig. 22, the outlines of the old bones are very readily seen, the apex of the conical sclerosis having, at points, just touched the surface of the old bone. The original wall of compact tissue is wholly rarefied by spongiosis, and the cancelli of the new and old bone are readily distinguished by the different directions of their axes. The normal compact wall of the phalanges being very thick relatively, the changes in it are the more marked. Sclerosis has invaded from half to two-thirds of the new growth. The head of the bone is also markedly rarefied by spongiosis.

MICROSCOPIC EXAMINATION.

The specimens from which the following description and wood-cuts were made, were prepared with his well known skill by Dr. J. H. McQuillen. They consisted of a transverse section through the thickened wall of a phalanx, embracing the thickness of the layers superimposed by the periosteum, but not of the entire original compact layer of the bone, and of a transverse section through the right canine tooth.

The section of the phalanx (Fig. A) exhibited a quite compact osseous structure—the Haversian canals being for the most part round, and rather small, though in some places they were irregularly shaped or oval, and larger. The intervening bone lamellæ were of unusual thickness, and presented in the majority of cases, bone corpuscles with canaliculi. In some cases, however, no bone corpuscles were present, and the lamellæ appeared to be merely calcified by saturation with bone salts.

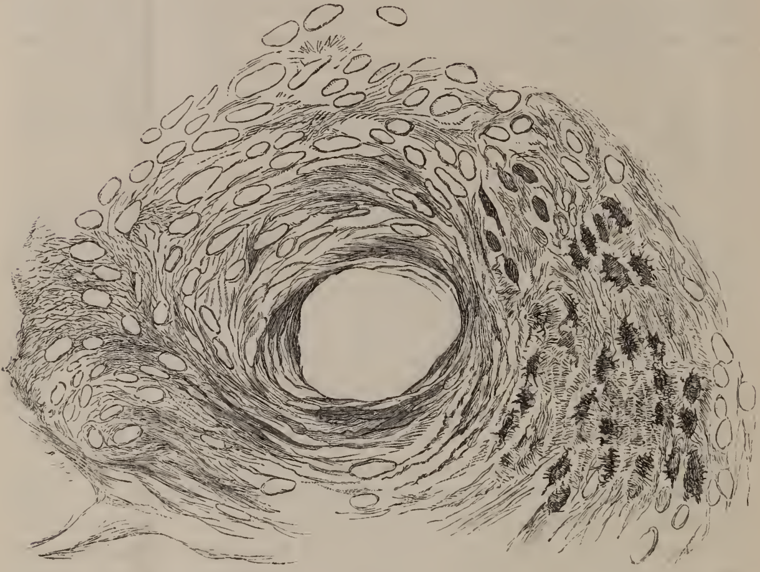

Fig. A.

The bone corpuscles were small and often indistinct; in some places they were unusually round, but in others they presented the normal elongated shape; their canaliculi were invariably very poorly developed, and often could not be discovered.

With regard to the mode of arrangement of the bone lamellæ, they were always developed concentrically with (parallel to the walls of) the Haversian canals, and in no instance were any lamellæ found whose direction was parallel to the external surface of the shaft.

The section of the tooth (Fig. B) showed the existence of numerous irregularly shaped, branching lacunæ in the dentine near the marginal layer of enamel. These spaces were of various sizes and intercepted the course of a varying number of dental tubuli. They indicated unquestionably either an arrest of the process of calcification of the dentine, or of the resorption of calcareous matter already deposited, conditions which are also present in the true bony tissue. They are identical with the so-called *interglobular spaces* first described by Kölliker and carefully studied by Dr. McQuillen of this city, who has published (Dental Cosmos, N. S. Vol. VIII. No. 3, pg. 113,) several excellent illustrations of them.

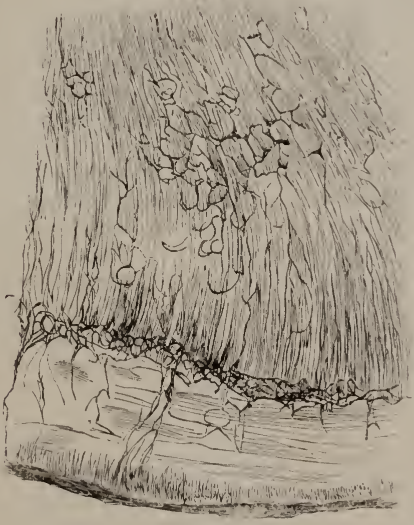

FIG. B.

PATHOLOGY OF THE DISEASE.

Having thus described the gross and minute features of these bones, we would hazard the following remarks in regard to the nature and cause of the pathological process :—

In the first place it is to be observed that three separate processes, or at least three distinct stages of the same process, are represented in different parts of the skeleton, or even, in some instances, in single bones. These stages are :

First. Internal Osteoporosis of the original osseous tissue. 2d. External Hyperostosis, due to successive attacks of Periostitis, both of which processes are present in varying proportion in almost all the bones, and 3d. Secondary Induration.

1. It is especially in regard to the explanation of the internal osteoporosis, which constitutes so marked a feature of these specimens, that we regret the absence of any careful examination of the bones in their recent condition. In their present state, it is only possible to describe the degree to which this rarefaction of the osseous tissue has occurred, but it is evident that such changes might be produced by very varied alterations of the medulla and bone corpuscles. Thus, among the recognized causes of osteoporosis, may be mentioned syphilis, scrofula, rheumatism; and, in addition, we must add that both osteomalacia and simple ostitis produce changes in the bones which, after the specimen has been boiled, and the organic matter entirely removed, are not to be distingushed from the effects of the first mentioned diseases. In each case, under the action of the morbid irritant, whether purely external and local, or internal and constitutional, there is more or less rapid proliferation of the essential vital elements of the osseous tissue, called bone corpuscles or cells. At the same time, the bony laminæ surrounding the Haversian canals, and the walls of the lacunæ, are progressively deprived of their calcareous salts and removed, while the enlarged spaces thus produced are filled by the constantly growing cellular elements. The manner in which this removal of the calcareous salts is effected has been, and indeed remains, a subject of much discussion. The first idea which seems to have been entertained may be inferred from the name, eccentric atrophy, which was given to many specimens of osteoporosis, under the belief that the bony lamellæ were thinned and pushed asunder by the centrifugal pressure of the growing medulla. There is, however, no evidence whatever in favor of such a mechanical explanation, and this hypothesis has justly been almost universally abandoned.

By far the most plausible explanation which has been advanced appears to be that the removal of the calcareous salts, the first essential step in the destruction of the bony lamellæ, is due to the solvent action of some acid elaborated by the bone cells during the inflammatory process. According to Weber, their removal is not due to the direct action of any acid, but is owing to a gradual conversion of the insoluble *tri-basic* phosphate of lime into the more soluble *bi-basic* salt.

As this feature of rarefaction is, however, common to so many diseases of the bones, it is evident that the most characteristic results of such diseases are to be rather found in the condition of the bone cells, and in the characters of the morbid product which has resulted from their multiplication. And it is to be trusted, that by careful chemical and microscopical study of these, such peculiarities will be discovered as will enable us to distinguish with certainty in recent bones the various morbid changes.

Heretofore the majority of observers have limited themselves either to a description of the dried bone, after maceration or boiling, or at most, of the general characters of the medulla with which its cancelli are filled. And it results from this superficial mode of study, that there is as yet but little exact knowledge of the really essential changes which the organic, active portions of bones undergo in disease.

Virchow, who was among the first to examine microscopically the condition of the bone cells in ostitis and some other diseases attended with rarefaction of the bone tissue, (Uber parenchymatöse Entzündung; Virchow's Archiv. Bd. IV. Hft. 2: 1852, b. s. 301 to 311,) formerly regarded the process as essentially a degenerative one, due to the fatty degeneration of the bone corpuscles and the subsequent softening and removal of the area depending on these cells. We have already, however, stated the view which appears most plausible in regard to the removal of the calcareous salts, and so far from fatty degeneration of the bone corpuscles being a constant feature in the different forms of osteoporosis, it would appear from the careful researches of Ranvier (Archives d' Anat. et Phys., Norm. et Path., No. 1, 1868, page 69), that this condition of the cells is altogether characteristic of caries and limited to that morbid process. On the other hand, there is every reason to presume that these cells are influenced by various morbid causes, (inflammation, syphilis, rheumatism, gout, scrofula, &c.) in the same way as the other tissues of the body, and give rise to products more or less characteristic of the diseased action present.

The history of the present case would appear to indicate that the nature of the disease was a rheumatic or scrofulous inflammation, but beyond this mere supposition we are prevented from advancing by the absence of any chemical and microscopical examination of the recent bones.

We would here again call attention to the marked peculiarity of the porotic bones, fully described at pages 24 and 25, and figs. 4 and 17, although we are unable to suggest any plausible explanation of the invariably parallel arrangement of the meshes of the porotic bone, and of the equally uniform vertical arrangement of the meshes of the new-formed sub-periosteal layers.

2. Another important appearance present in the bones here described, and indeed one which is as marked and wide-spread as the osteoporosis, is the extensive development of bone upon the exterior of the original shafts. In our description of the skeleton, we have already noted the peculiarities of these sub-periosteal growths, and it will be remembered that they are in every instance limited to the body or shaft of the bones, and never extend on to the epiphyses, and that they usually present several thin laminæ of imperfectly compact bone, parallel to the shaft and separated from it and from each other by more or less wide interspaces usually occupied by coarse cancellated tissue.

It is undoubtedly from the examination of such specimens as this that the mistaken idea arose that the lamellæ, of which the original compact shaft was formed, had been pushed asunder by the great enlargement of its cancelli. It will, however, be seen from our description that the appearances contradict any such supposition, and clearly show that while in the cancellated and imperfectly compact tissue of the original shaft a process of rarefaction (osteoporosis) has been advancing by atrophy of the bony lamellæ, there has also been an active process of periostitis resulting in the formation of thick layers of new bone on the exterior.

Another means of distinguishing the line of demarcation between the original shafts and the new-formed layers, is the abrupt change in the direction of the cancelli already referred to.

It is evident, also, that the periostitis has not been uniformly continuous, but that for a variable time its intensity was such that the inflammatory product was capable of but imperfect ossification, and remained as cancellous tissue; while at irregular intervals thin layers of imperfectly compact tissue have been formed. The occurrence of this long standing, but not uniform process of periostitis ossificans appears to account, in every instance, for the changes observed on the exterior of the original shafts. In addition to this uniform hyperostosis, it will be observed from the description (see pp. 23, 24) that the same process of periostitis has given rise to varied forms of porous osteophytes.

3. In some places, however, it is evident that a still further change has occurred, consisting in the gradual conversion of the cancellous tissue into compact bone. This process of consecutive or secondary induration is most marked in the layers of bone formed by the periosteum; though it is present in the shafts of the tibiæ, femora and some other bones. It is manifestly impossible to determine accurately the portions which have been rendered compact by this process, but the disposition of the successive layers of new-formed bone is, in general, so much like that above described, that we are inclined to regard all the areas of compact bone of any considerable thickness as due to this secondary change.

It would, indeed, appear but probable that as the high degree of inflammation, under which the layer of cancellous tissue had been formed, subsided, there should be a tendency to the formation of successive layers of bone on the interior of the walls of the cancelli. It is especially in connection with this point that the result of the microscopical examination of the sub-periosteal layers is of so much interest. It will be observed (see Fig. A) that in the newly-formed compact bony tissue, the lamellæ are arranged concentrically around the vascular canals; a mode of arrangement which strongly points to the occurrence of the process of consecutive induration, as we have above described.

The specimens are deposited in the Museum of the College of Physicians.

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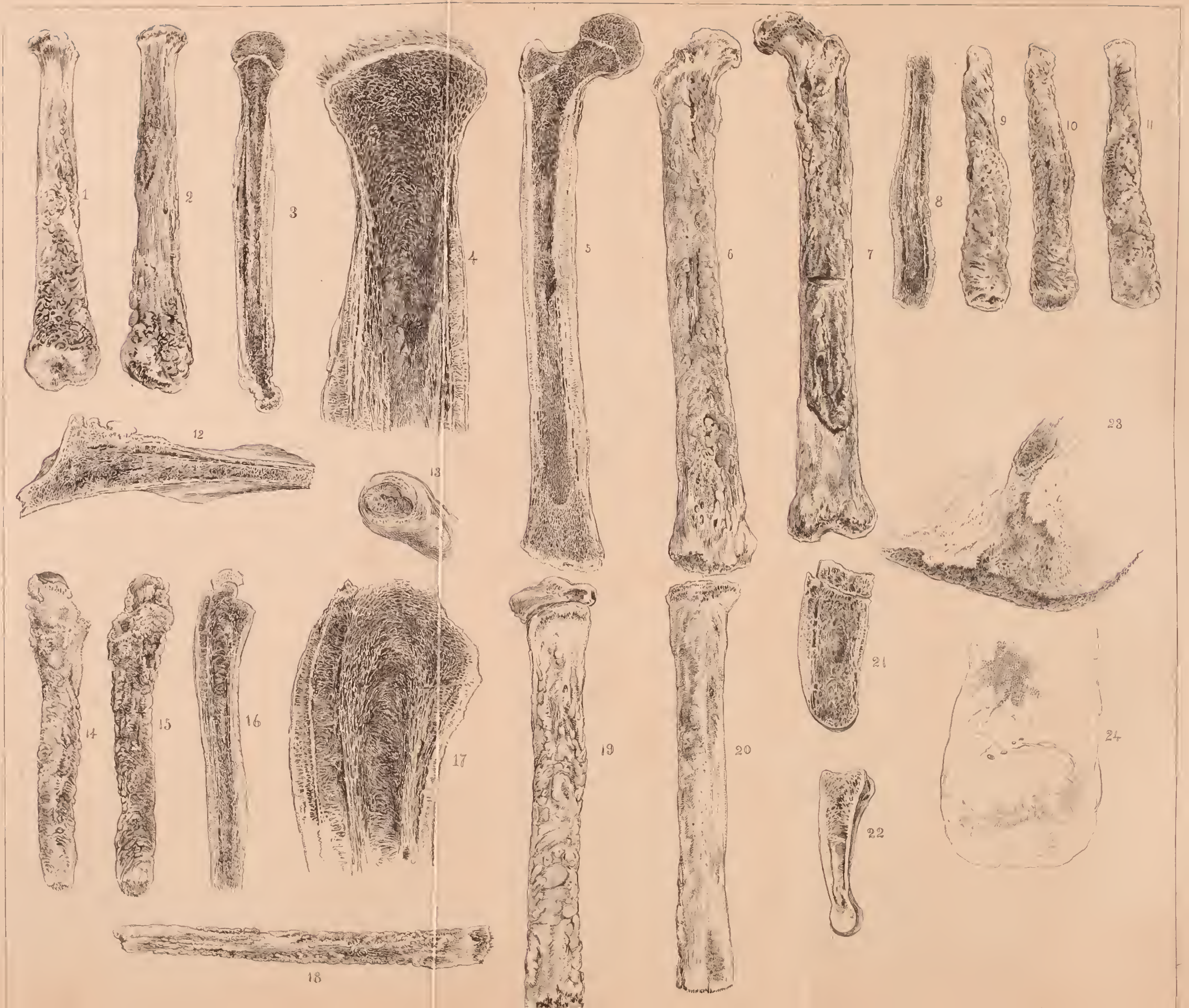
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EXPLANATION OF PLATES I. AND II.

Fig. 1. Posterior surface of right Humerus.
" 2. Anterior surface of left Humerus.
" 3. Section of left Humerus.
" 4. " " natural size.
" 5. Section of left Femur.
" 6. Anterior surface of right Femur.
" 7. Posterior surface of right Femur. The notch about the middle is where a slice was removed for microscopic preparations.
Fig. 8. Section of left Radius.
" 9. Posterior surface of left Radius.
" 10. Posterior surface of right Radius.
" 11. Anterior surface of right Radius.
" 12. Section of left Ilium.
" 13. End of right Clavicle.
" 14. Posterior surface of right Ulna.
" 15. Anterior surface of right Ulna.
" 16. Section of left Ulna.
" 17. " " natural size.
" 18. Posterior surface of right Fibula.
" 19. Posterior surface of left Tibia.
" 20. Anterior surface of right Tibia.
" 21. Section of Phalanx natural size.
" 22. Section of healthy Phalanx natural size inserted for comparison.
Fig. 23. Vertebral end of spine of left Scapula.
" 24. Anterior surface of carpal end of right Radius enlarged.

N. B. All the drawings except where noted are on a scale of ½ the natural size.